

Losses Avoided in Birmingham, Alabama

Analysis of 735 Acquisitions on Village Creek



**Federal Emergency
Management Agency
Region IV, Atlanta, GA**



**US Army Corps of
Engineers
Mobile District,
Alabama**



**City of Birmingham,
Birmingham, Alabama**

ACKNOWLEDGEMENTS

There has been a need to develop mechanisms and methodology for evaluation of completed hazard mitigation projects. Subsequent disasters provide the opportunity to evaluate such projects. The losses avoided analysis presented in this document is a step towards this objective.

Several individuals contributed towards this effort. Todd Davison envisioned the need for conducting this study, after the March 2000 flood in Birmingham. This flood was of similar magnitude to floods that triggered the acquisition projects by the USACE and FEMA from 1986 till date. Shabbar Saiffee led the effort to define the scope of the report, gather data, conduct the analysis and write this report. Kenneth Huggins was instrumental in gathering the data for this analysis.

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Losses Avoided in Birmingham, Alabama Analysis for 735 Acquisitions on Village Creek (Post-Disaster Economic Evaluation of Hazard Mitigation)

Executive Summary

Under the provisions of the Stafford Act, the Federal Emergency Management Agency (FEMA) has funded numerous mitigation projects to interrupt the cycle of damage to property and alleviate the suffering to residents in the disaster impacted communities. The acquisition project along the flood plain of Village Creek in Birmingham, Alabama is one such project. This report concisely documents the economic success of this project.

The mission of the Village Creek Acquisition Project was to mitigate flood hazards permanently through an acquisition and relocation program with the following three objectives:

- (1) ensure fair compensation to homeowners experiencing severe economic hardship in the high-risk flood plain of Village Creek in Birmingham,
- (2) improve floodwater discharges by removing structures from the floodway/flood plain, and
- (3) convert such lands into permanent open space, thereby reducing flood levels and the consequential threats to remaining residents of the flood plain.

This report documents some of the direct savings resulting from these Federally funded acquisition projects. The losses avoided are a direct result of implementing the Village Creek Acquisition Project in Birmingham, Alabama. Numerous floods of similar magnitude have occurred since the implementation of this project, and the resulting losses avoided for multiple flooding events are presented.

Under FEMA's Hazard Mitigation Grant Program (HMGP) this acquisition project was funded in two phases at a cost of \$5.7 million (75% Federal cost share). The city of Birmingham provided matching funds of \$1.9 million (25% cost share) to enable purchase of approximately 220 properties with structures and approximately 30 vacant lots. This project augments the Village Creek Flood Control Project under which approximately 642 structures were acquired by the U.S. Army Corp of Engineers (USACE) during the 1989-1994 period. The total cost of the USACE and the City of Birmingham cost shared project was \$29.6 million. In total, more than 900 properties are acquired.

Analysis in this report shows that the buy-outs implemented by the USACE have avoided losses of more than \$60 million on an investment of \$22 million (normalized to \$36 million) since 1995. This saving in disaster costs represents a greater than 150% return on investment. Further, the acquisitions cost shared by the City of Birmingham and FEMA have avoided direct losses of \$3.4 million for an investment of \$7 million in less than two years (1999-2000).

Introduction

Each year, natural disasters cause billions of dollars in damages and economic losses. As our population continues to migrate to hazard-prone regions, disaster-related losses will continue to escalate. A USA TODAY newspaper analysis found that an estimated 41 million people - more than one in seven Americans - now live in a county along the eastern or southern seaboard. That number swells by several million when inland residents with second homes near the shore are included [1]. Large numbers of people entering the retirement age, ever increasing demand for recreational activities, and the affluence of the baby boomer generation drives this migration.

Fortunately, there is an unprecedented effort in communities across the nation to reduce the risk of floods, earthquakes, storm surges, tornadoes and other natural hazards. Hazard mitigation - those actions taken to permanently reduce or eliminate long-term risk to people and their property from the effects of hazards - is increasingly recognized as an integral feature of community planning.

Yet, key questions need to be answered. *To what extent are these mitigation programs working? Are we able to quantify the **losses avoided (savings)** as a direct result of implementing mitigation programs?*

The purpose of this report is to document the direct losses avoided (i.e.; savings) resulting from the Federally cost shared Village Creek Acquisition Projects. The losses avoided are a direct result of implementing the acquisition and relocation projects in the flood plain of Village Creek, Birmingham, Alabama. For example, during the floods of December 1983, Village Creek rose above its flood stage by 4.8 feet. Flooding in the Ensley neighborhood of Birmingham damaged 400-500 homes, and was the worst flooding in recent memory, according to a longtime resident.

Numerous floods of similar magnitude have occurred since the implementation of this project, and the calculated losses avoided for multiple flooding events are presented. The methodology used is similar to one being developed by Durham Technologies, Inc. [2]. The analysis also shows that the benefits of this acquisition project exceed the costs.

The primary reason for recurring damage is attributed to structures located in the 100-year flood plain. Numerous structures were in the floodway. Adding to the problem were obstructions in the path of the water flow, such as under-sized culverts and bridges. Other factors contributing to regular flooding included debris build-up and erosion from roadbeds. Increased urban development upstream and downstream apparently contributed to the damages and would continue to cause future floods, unless a concerted effort was made to mitigate the creek flooding.

Property acquisition or buyout of flood-prone structures and areas is the priority mitigation strategy for many states. Property acquisitions in the flood plain offers five key advantages:

- 1) permanently reduces or eliminates susceptibility to future flood damage in high risk areas,
- 2) achieves other flood management goals (e.g., increasing flood plain storage capacity),
- 3) achieves natural resource conservation goals (e.g., preservation of ecologically important wetlands, estuarine ecosystems, and beachfront areas),
- 4) attains community goals (e.g., provision of affordable housing, open space, and parks) and
- 5) reduces the amount of disaster funding needed.

Acquisition programs have direct and indirect costs, including the short-term costs of the acquisition, the long-term costs associated with maintaining the lots once the land is cleared, and the loss of tax revenue. Benefits include increased public safety, reduced evacuation requirements, and the elimination of flood insurance claims (if the structure was insured). Table-1 below provides a listing of numerous repetitive costs that are not quantified in the analysis of this report.

Table-1: Disaster related repetitive costs not reflected in the losses avoided or benefit-cost analysis.

<u>Community</u>	<u>County</u>	<u>State</u>	<u>Federal</u>
Disruption of daily life Pain and suffering Human stress Impact on mental health Impact on physical health Irreplaceable heirlooms Environmental impact Physical Impact on business Disruption of Economic Base Education	Human stress Disruption of Economic Base	Human stress	Human stress
Response/Recovery Evacuation Immediate shelter/ food Temporary housing Debris removal & cleanup Public health issues Activation & Deployment Administrative Costs	Response/Recovery Evacuation Immediate shelter/ food Temporary housing Debris removal & cleanup Public health issues Activation & Deployment Administrative Costs	Response/Recovery Evacuation Immediate shelter/ food Temporary housing Debris removal & cleanup Public health issues Activation & Deployment Administrative Costs	Response/Recovery Evacuation Immediate shelter/ food Temporary housing Debris removal & cleanup Public health issues Activation & Deployment Administrative Costs

Background

Village Creek's flood plain makes up 53% of Birmingham's Special Flood Hazard Area. Village Creek rises within the northwest part of Birmingham and flows in a southwesterly direction through the city for 12 miles. In this 12-mile stretch, Village Creek drains an area of approximately 40 square miles and is moderate to steep in slope. Village Creek's flood velocities range from 3 to 9 feet per second. Its flood duration is usually less than 10 hours, with a flood reaching maximum stage about 2 to 4 hours after an intense rainfall. In some areas flood waters can rise at a rate of 3 feet per hour.

Numerous neighborhoods sit in the floodway and flood plain of the Village Creek in Birmingham, Alabama. The Village Creek Floodplain includes approximately 4,574 residential dwellings, 196 commercial/industrial structures and 87 institutional structures (critical facilities). Historically, thousands of homes have been inundated by repetitive flooding. In the last 20 years alone, Village Creek has flooded these neighborhoods more than 20 times (see Table-2). The purpose of presenting this data is to underscore the repetitive nature of the floods. Each of these flood events has not been correlated to flood frequency data, as such information is not required for the losses avoided analysis presented in the report.

Often, flooding occurred several times in a given year. Also the question is raised, How often will a flood be tolerated? This damage history prompted the City of Birmingham and the U. S. Army Corps of Engineers (USACE) to seek congressional authorization and funding to accomplish both structural and non-structural solutions to resolve the repetitive flooding along Village Creek [3]. Since the completion of the project by the USACE, FEMA through its Hazard Mitigation Grant Program (HMGP) has funded the acquisition of additional properties in the flood plain in the same neighborhood.

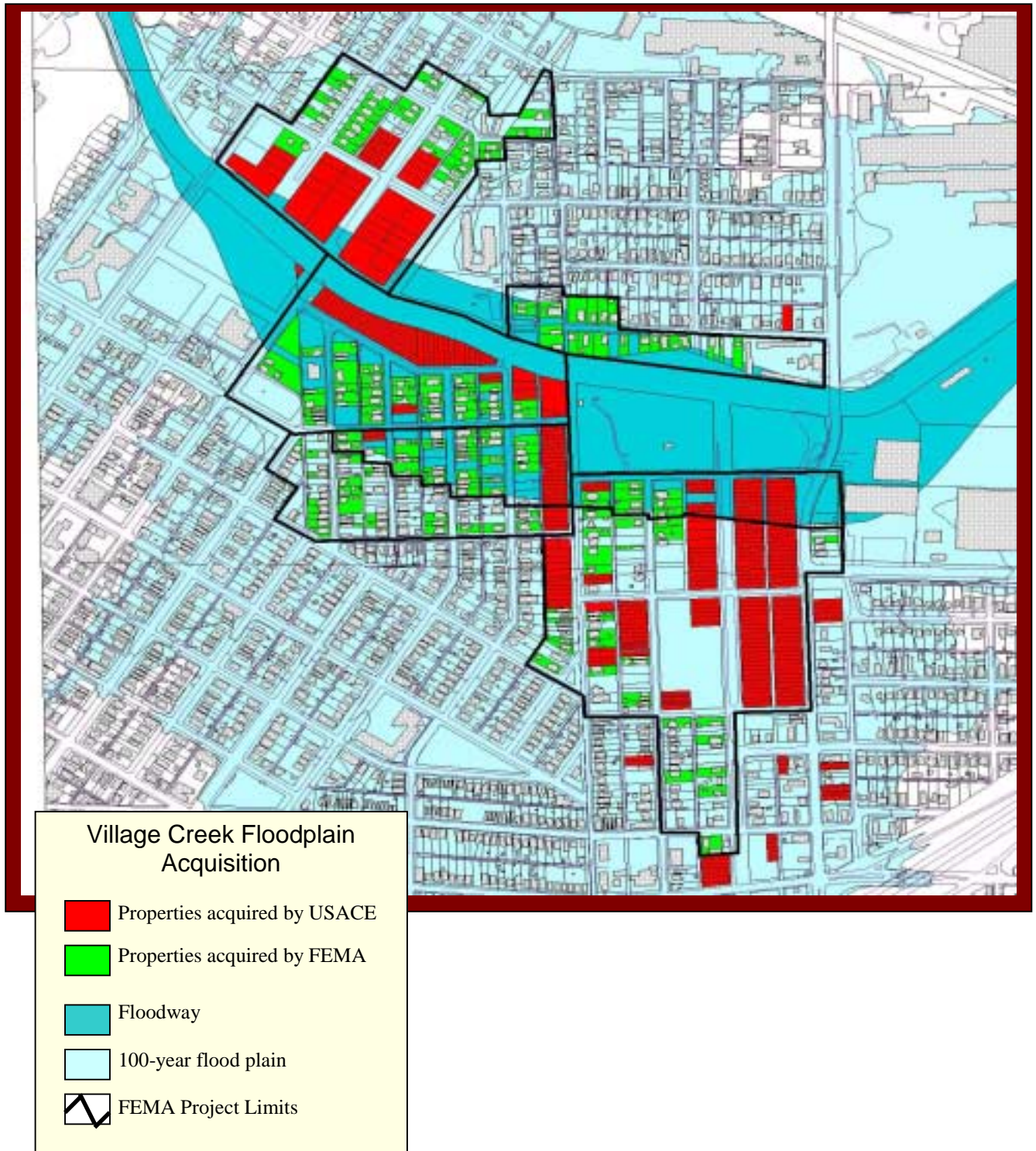
During the period between 1970 and 1980, the USACE dredged Village Creek in unsuccessful attempts to control flooding. In 1986 and 1990, Congress passed Water Resources Development Acts authorizing \$29.6 million for non-structural flood control projects in the Village Creek Flood Hazard Area. The City of Birmingham contributed \$7.4 million and used the combined funds to purchase 642 properties in this flood plain. The scope of the USACE/City of Birmingham acquisition project included Ensley, East Birmingham, Roebuck and other smaller communities.

In 1996 another flood resulted in a Federal disaster declaration. The City of Birmingham received two FEMA-HMGP grants totaling \$7.6 million. The City of Birmingham provided a 25% match with city funds and in-kind services. The funds were used to acquire approximately 250 properties. The properties acquired during this phase of the project were mainly in the Ensley neighborhood. Ensley has been the largest community adversely flooded by the Village Creek in the City of Birmingham. Figure-1 shows the scope of the Village Creek Acquisition Project in the Ensley neighborhood of Birmingham. The properties acquired by the USACE are highlighted in red and the green properties indicate the acquisitions under the FEMA-HMGP program.

TABLE - 2: List of Recent Floods in Village Creek, Birmingham

<u>Year Month</u>		<u>Crest Height (ft)</u>	<u>Source</u>	<u>Federal Disasters</u>
1977	September	13.26	1	
1979	January	13.8	1	
1979	March	11.24	1	
1979	April	14	1	
1982	December	12.3	1	
1983	May	13.9	1	
#1983	December	14.8	1	yes
1988	July	11.5	1	
1994	September	11.2	1	
1994	December	11.3	2	
1995	September	11.2	2	
##1995	October	12	1	yes
1995	November	10.3	2	
1996	January	13.7	1	yes
###1996	March	12.84	1	yes
1997	January	13.5	1	yes
1998	January	13.6	2	yes
###1998	May	10.4	1	yes
1998	July	11.6	1	
1998	August	10.8	1	yes
1999	January	11.32	1	yes
1999	May	10.17	1	
1999	June	12.84	1	
1999	October	11.18	1	
^^2000	March	13.96	1	yes
<p>1 = USGS gauge reading near project site in Ensley</p> <p>2 = Birmingham News, page-12E, January 18,1998</p> <p># = Triggered USCOE \$29.6 million acquisition project</p> <p>## = Triggered FEMA-HMGP \$5 million acquisition project</p> <p>### = Triggered FEMA-HMGP \$2.6 million acquisition project</p> <p>^^ = Triggered Losses Avoided analysis (resulting in this report)</p> <p>Note: Flood Stage = 10 feet</p>				

Figure-1: Partial scope of the Village Creek Acquisition Project in Ensley community of Birmingham.



Economic Analysis

Analysis of *losses avoided* in subsequent disasters through hazard mitigation, helps to quantify benefits resulting from implementing a mitigation project. As compared to the pre-project benefit-cost analysis it identifies the actual losses avoided. *Benefit-cost analysis* can be considered as foresight and *losses avoided analysis* can be compared to hindsight. Thus, measuring losses avoided is a quantitative method for depicting the financial impact (savings) realized by the community as the direct result of the mitigation project.

The benefit to cost analysis for the Village Creek Acquisition Project was performed by clustering properties of the same first floor elevation (FFE). Also, assuming same building replacement value and nominal total floor area of 1000 sq.ft., allowed cluster modeling to determine the benefit to cost ratio. Summarized below are the results of the cluster modeling of the benefits to cost ratio (see Table-3).

To perform the losses avoided calculations, detailed data was collected from the City of Birmingham Village Creek Project Office and the USACE Mobile District Office. The multiple flood-related losses avoided (savings) were calculated for actual events. Each flood is considered as an independent event for calculating the losses avoided. This document includes the total losses avoided calculations due to repetitive flooding, for two (2) actual floods for the FEMA-HMGP project and for six (6) actual flood events for the USACE buy-outs. The cost saving from these repetitive floods is very significant and clearly illustrates the financial benefits of this acquisition and relocation project.

Table-3: Relationship between benefit-cost ratio vs. first floor elevation

<u>First floor elevation</u> (FFE in project area)	<u>Benefit-cost ratio</u> (25% demolition threshold)	<u>Benefit-cost ratio</u> (50% demolition threshold)
517 feet	20.7	17.9
518 feet	11.2	9.7
519 feet	5.4	4.7
520 feet	2.8	2.4
521 feet	1.1	0.9
notes: 1) Demolition threshold: Minimum disaster caused damage to a structure that leads to demolition. 2) See Appendix D for sample summary of BCA results. 3) The flood hazard data utilized in the BCA is from a FIS study completed in January of 1999.		

Losses Avoided Methodology and Calculations

The Village Creek in the City of Birmingham has a history of frequent flooding (Table-2). The severe floods of March 2000 presented an opportunity to conduct an analysis to carefully estimate the savings due to losses avoided as a result of the acquisition and relocation projects.

A. Data Collection

After the flood disaster of March 2000, the data listed below and referred to in Table-4 and Table-5 was collected and/or developed. The data gathering phase for this report was extensive and required collection of detailed data for approximately 800 properties acquired by the USACE and the City of Birmingham. The data was researched from the City of Birmingham project files. Also, the USACE in Mobile, Alabama provided the data for 518 properties with structures that were acquired under their phase of the project. All these properties had a history of flooding or were prone to flooding. The raw data was processed, screened, and used for further calculations.

Vulnerability data included building depth damage function (DDF), contents damage function, displacement costs and demolition threshold (Appendix A).

Mitigation costs included the property cost, the relocation cost, the appraisal fees, the demolition cost, title fee, the legal cost and project management cost (see Appendix B and Appendix C).

Historical flood hazard data included flood elevation, if property is in floodway or 100-year flood plain, flood insurance cost and flood insurance study data.

Building data included project completion date, physical address, structure type, building square footage, first floor elevation (FFE) and number of floors (See Appendix B for FFE data).

The historical flood hazard data collected should also include the repetitive damage information from the National Flood Insurance Program (NFIP). For the City of Birmingham acquisitions, this data is not available as the property owners did not have flood insurance.

The FFE data was not available for the properties acquired under the USACE phase of the project. To conduct the losses avoided analysis, an important assumption has been made to establish the FFE for the 518 USACE properties with structures. The range of FFE for properties acquired during the recent FEMA phase of the project was 516 feet to 522 feet. Thus, a conservative assumption for the FFE is 518 feet (mid-range FFE for properties acquired during the FEMA phase). The results of this analysis are in Appendix C.

B. Computation of Losses Avoided

Presented briefly, in this section is the procedure used to compute the losses avoided from flood events that occurred after the acquisitions. To arrive at the losses avoided it is necessary to determine; 1) the *total acquisition costs*; and 2) the costs that would have been incurred had the mitigation project not been implemented (*losses avoided*). Each of the 735 properties evaluated had the above analysis performed.

The *total acquisition cost* for each property was determined using the formulae presented in Table - 4. The *losses avoided calculation* was determined using the formula in Table - 5.

Table - 4: Formulae for determination of total acquisition costs

<u>Property Type</u>	<u>Formulae for Total Acquisition Cost Calculation</u>
Homes with Tenants	Purchase price + Relocation cost + Appraisal fee + Title fee + Legal fee + Demolition cost + Project management fee
Owner Occupied Homes	Purchase price + Appraisal fee + Title fee + Legal fee + Demolition cost + Project management fee
Vacant Homes	Purchase price + Appraisal fee + Title fee + Legal fee + Demolition cost + Project management fee
Vacant Lots	Purchase price + Title fee + Legal fee + Project mgmt. fee

Table - 5: Formula for determination of losses avoided

<u>Formula for Losses Avoided Calculation</u>	<u>From Depth Damage Table (see Appendix A)</u>
Damage to structure + Damage to contents + Displacement cost	= (Bldg DDF) x (Property value) = (Content DDF) x (Content value) = (\$500 per month) Note: DDF = Depth damage function

C. Summary of Losses Avoided

Analysis of the data in this report shows that the buy-outs implemented by the USACE have avoided losses of more than 150% (normalized savings of \$60 million on an investment of \$36 million since 1995). These estimates are normalized to the year-2000 (over 10-years) for the USACE phase of the project. The discount rate used for these calculations is 5%. Further, the acquisitions and relocations, cost shared by the City of Birmingham and FEMA, have avoided direct losses of \$3.4 million on an investment of \$7 million in less than a two-year period (1999-2000).

Table-6 below provides a summary of the direct losses avoided resulting from acquisitions and relocations in Birmingham. For detailed results of losses avoided, please refer to Appendix B and Appendix C. Appendix B presents the losses avoided for 217 acquired properties with structures following two recent floods. Appendix C, presents the losses avoided for 518 properties with structures resulting from six different floods.

Table-6: Summary of normalized losses avoided due to acquisitions in Birmingham

<u>Funding Sources</u>	<u>Total Acquisition Cost</u>	<u>Total Losses Avoided</u>	<u>% of Losses Avoided to Acquisition Cost</u>
USACE/City of Birmingham (1989-1994)	\$36,322,343	\$60,309,747 (six floods)	166%
FEMA/City of Birmingham (1998-2000)	\$7,070,426	\$3,399,893 (two floods)	48 %
TOTAL(in yr 2000 dollars)	\$43,392,769	\$63,709,640	146%

(Note: Normalized to the year-2000 (over 10-years) for the USACE phase of the project. The discount rate used for these calculations is 5%.)

Conclusion and Recommendations

The calculation of losses avoided is a detailed quantitative method/tool used to perform a post-mitigation, HMGP project review. Analysis of *losses avoided* in subsequent disasters through hazard mitigation, helps to quantify benefits resulting from implementing a mitigation project. As compared to the pre-project benefit-cost analysis, it identifies the losses avoided. Thus, measuring losses avoided is a quantitative method for depicting the financial impact (savings) realized by the community as a direct result of the mitigation project.

Losses avoided analysis has demonstrated the economic viability of the Village Creek Acquisition Project. In the time span of less than six years the \$22.3 million invested (normalized to \$36 million for year 2000 over a 10-year period) under the USACE project has saved \$54 million (normalized to \$60 million) in losses avoided. Also, an investment of \$7 million under FEMA's hazard mitigation grant program has saved \$3.4 million in a short duration of one year.

Recommendations

- 1) The determination of losses avoided should be standardized as a post review or auditing process for mitigation projects.
- 2) Careful data gathering is essential in the early stages of approval of the mitigation project and during the implementation phase. This is because, after the implementation of a project, such data is either deleted from the applicant resources or is difficult and more time consuming to collect. Most important data includes; mitigation project costs, base flood elevation (BFE) and first floor elevation (FFE). This information is critical to accurately determine disaster losses avoided in a timely and cost-effective manner.
- 3) The key point to remember is; that the process of collecting, organizing, and analyzing data to measure losses avoided after a subsequent disaster event will be greatly facilitated because the data requirements to support the analysis are identified on the front end - prior to the disaster.
- 4) The methodology used in calculating losses avoided due to floods should be extended to wind and earthquake related mitigation projects.
- 5) The use of repetitive loss, NFIP, data to calibrate against the losses avoided calculations must be evaluated. This is important as the actual claim information can be used to more accurately project cost savings.

References

1. USA TODAY, page-1A, July 21, 2000.
2. "Measuring Losses Avoided from Hazard Mitigation: An Operation Manual", Draft Report, prepared by: Durham Technologies, Inc., FEMA, Washington, June 2000.
3. Public Information Brochure, Village Creek Birmingham, Alabama, US Army Corps of Engineers, Mobile District, 1985.

Appendix A

**Flood Depth-Damage Table Used
(For One-story Homes w/Raised First Floor)**

and

Illustration of how the data is used for calculations

Flood Depth-Damage Table Used
(For One-story Homes w/Raised First Floor)

<u>Flood Depth (ft)</u>	<u>Bldg (DDF)</u>	<u>Contents (DDF)</u>	<u>Displacement (days)</u>
-2	6%	0%	0
-1	6%	0%	0
0	13%	14%	0
1	16%	21%	62
2	23%	33%	126
3	27%	41%	166
4	35%	44%	182
5	45%	45%	365
6	100%	60%	365
7	100%	65%	365
8	100%	66%	365
9	100%	67%	365

**Sample illustration of usage of the
above table for the losses avoided
calculations:**

Sample Flood Crest Elevation	520 ft
First Floor Elevation	518 ft
Flood Depth	2 ft
Building DDF	23%
Contents DDF	33%
Displacement Period	126 days

Appendix B

Calculations for Cumulative Losses Avoided Following Two Floods, Since the City of Birmingham and FEMA-HMGP Acquisitions (1998-2000)

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
1	1901	10th Way	520.2	\$43,253	\$7,375	\$2,660	\$10,035
2	1905	10th Way	518.2	\$67,565	\$24,333	\$16,102	\$40,435
3	1912	10th Way	519.1	\$34,960	\$8,831	\$5,961	\$14,792
4	1913	10th Way	520.9	\$32,067	\$1,972	\$1,972	\$3,944
5	1916	10th Way	518.8	\$37,969	\$9,502	\$6,474	\$15,976
6	2007	10th Way	520.8	\$33,455	\$2,057	\$2,057	\$4,115
7	2009	10th Way	519.3	\$42,049	\$10,412	\$7,169	\$17,582
8	2023	10th Way	520.2	\$40,979	\$6,987	\$2,520	\$9,507
9	2117	10th Way	520	\$26,432	\$4,507	\$1,626	\$6,132
10	2016	18th Street	518	\$32,953	\$12,946	\$8,384	\$21,330
11	2004	18th Street	518.6	\$54,289	\$13,142	\$9,256	\$22,398
12	2013	18th Street	517.6	\$64,823	\$23,431	\$15,491	\$38,922
13	900	Avenue G	521.4	\$33,956	\$2,088	\$2,088	\$4,177
14	901	Avenue G	520.2	\$31,950	\$5,447	\$1,965	\$7,412
15	909	Avenue G	518.6	\$21,435	\$5,815	\$3,655	\$9,470
16	912	Avenue G	519.5	\$30,947	\$7,937	\$5,276	\$13,213
17	916	Avenue G	519.2	\$27,937	\$7,265	\$4,763	\$12,029
18	920	Avenue G	518.4	\$38,973	\$14,926	\$9,726	\$24,653
19	928	Avenue G	517.8	\$29,963	\$11,962	\$7,717	\$19,679
20	1000	Avenue G	518.9	\$34,224	\$8,667	\$5,835	\$14,503
21	904	Avenue G	519.6	\$35,729	\$6,092	\$2,197	\$8,289
22	917	Avenue G	519.8	\$35,729	\$6,092	\$2,197	\$8,289
23	921	Avenue G	519.7	\$31,214	\$5,322	\$1,920	\$7,242
24	924	Avenue G	518.5	\$43,253	\$16,335	\$10,681	\$27,015
25	925	Avenue G	519.6	\$41,749	\$7,118	\$2,568	\$9,686
26	929	Avenue G	517.2	\$31,315	\$15,079	\$12,407	\$27,486
27	813	Avenue H	519.4	\$13,911	\$4,138	\$2,372	\$6,509
28	815	Avenue H	519.3	\$22,921	\$6,147	\$3,908	\$10,055
29	909	Avenue H	517.7	\$27,435	\$11,130	\$7,153	\$18,284
30	912	Avenue H	518	\$24,425	\$10,140	\$6,482	\$16,622
31	917	Avenue H	517.3	\$43,788	\$19,981	\$16,510	\$36,491
32	1121	Avenue H	517.8	\$35,227	\$13,694	\$8,891	\$22,585
33	1123	Avenue H	517.6	\$21,684	\$9,238	\$5,871	\$15,109
34	811	Avenue H	518.4	\$21,684	\$9,238	\$5,871	\$15,109
35	824	Avenue H	518.3	\$33,221	\$13,034	\$8,444	\$21,478
36	900	Avenue H	518.2	\$33,723	\$13,199	\$8,556	\$21,754
37	904	Avenue H	517.9	\$38,237	\$14,684	\$9,562	\$24,246

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
38	908	Avenue H	517.8	\$39,040	\$14,948	\$9,741	\$24,690
39	908	Avenue I	516.7	\$32,953	\$15,723	\$12,946	\$28,668
40	914	Avenue I	517.3	\$21,917	\$11,386	\$9,315	\$20,700
41	924	Avenue I	518.7	\$28,940	\$7,489	\$4,934	\$12,423
42	1203	Avenue I	518.5	\$32,953	\$12,946	\$8,384	\$21,330
43	1205	Avenue I	518.5	\$33,956	\$13,276	\$8,608	\$21,883
44	1207	Avenue I	518.5	\$33,956	\$13,276	\$8,608	\$21,883
45	1201	Avenue I	517.7	\$28,907	\$11,615	\$7,482	\$19,096
46	901	Avenue I	517.6	\$40,896	\$15,559	\$10,155	\$25,714
47	905	Avenue I	518.5	\$32,218	\$12,704	\$8,220	\$20,924
48	912	Avenue I	517.4	\$32,719	\$15,631	\$12,869	\$28,500
49	920	Avenue I	519.6	\$46,062	\$7,854	\$2,833	\$10,686
50	1112	Avenue J	519.8	\$33,956	\$5,789	\$2,088	\$7,878
51	1138	Avenue J	517	\$18,908	\$10,203	\$8,325	\$18,528
52	1209	Avenue J	518	\$34,960	\$13,606	\$8,831	\$22,438
53	1214	Avenue J	517.4	\$31,568	\$15,178	\$12,490	\$27,668
54	1217	Avenue J	518.4	\$32,953	\$12,946	\$8,384	\$21,330
55	1223	Avenue J	519.6	\$30,947	\$5,276	\$1,903	\$7,180
56	1237	Avenue J	518.9	\$20,914	\$5,699	\$3,566	\$9,265
57	1243	Avenue J	519.8	\$18,707	\$3,190	\$1,150	\$4,340
58	1105	Avenue J	519	\$15,664	\$4,528	\$2,671	\$7,199
59	1114	Avenue J	518.7	\$204,275	\$46,589	\$34,829	\$81,418
60	1117	Avenue J	519.1	\$56,797	\$13,701	\$9,684	\$23,385
61	1120	Avenue J	518	\$8,641	\$4,947	\$2,962	\$7,910
62	1129	Avenue J	521	\$49,775	\$3,061	\$3,061	\$6,122
63	1132	Avenue J	516.9	\$25,095	\$12,634	\$10,360	\$22,995
64	1134	Avenue J	517.3	\$13,156	\$7,942	\$6,432	\$14,375
65	1136	Avenue J	516.9	\$23,991	\$12,201	\$9,997	\$22,198
66	1200	Avenue J	517.8	\$33,321	\$13,067	\$8,466	\$21,533
67	1201	Avenue J	519	\$20,680	\$5,647	\$3,526	\$9,173
68	1205	Avenue J	518.8	\$39,481	\$9,840	\$6,732	\$16,571
69	1208	Avenue J	517.5	\$36,532	\$17,129	\$14,123	\$31,252
70	1218	Avenue J	519.8	\$42,451	\$7,238	\$2,611	\$9,849
71	1224	Avenue J	519.4	\$31,716	\$8,108	\$5,408	\$13,516
72	1227	Avenue J	519.5	\$33,121	\$8,421	\$5,647	\$14,068
73	1229	Avenue J	519	\$38,337	\$9,585	\$6,537	\$16,121
74	1230	Avenue J	519.5	\$44,056	\$10,860	\$7,512	\$18,371
75	1232	Avenue J	519.5	\$33,923	\$8,600	\$5,784	\$14,384
76	1236	Avenue J	519.7	\$38,538	\$6,571	\$2,370	\$8,941
77	1239	Avenue J	519.2	\$20,680	\$5,647	\$3,526	\$9,173

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
78	1242	Avenue J	518.7	\$40,043	\$9,965	\$6,827	\$16,792
79	1248	Avenue J	520.2	\$42,250	\$7,204	\$2,598	\$9,802
80	1117	Avenue K	517.3	\$16,901	\$9,414	\$7,665	\$17,079
81	1205	Avenue K	517.4	\$25,429	\$12,766	\$10,470	\$23,236
82	1211	Avenue K	517.1	\$18,526	\$10,053	\$8,199	\$18,252
83	1219	Avenue K	519.2	\$19,509	\$5,386	\$3,326	\$8,712
84	1221	Avenue K	517.1	\$22,921	\$11,780	\$9,645	\$21,425
85	1224	Avenue K	519.2	\$49,005	\$11,964	\$8,355	\$20,319
86	1235	Avenue K	517.7	\$30,947	\$12,286	\$7,937	\$20,222
87	1240	Avenue K	518.6	\$38,973	\$9,726	\$6,645	\$16,371
88	1242	Avenue K	518.8	\$10,901	\$3,466	\$1,859	\$5,325
89	1108	Avenue K	518.1	\$35,227	\$13,694	\$8,891	\$22,585
90	1109	Avenue K	518.4	\$35,729	\$13,859	\$9,003	\$22,862
91	1113	Avenue K	519	\$31,465	\$8,052	\$5,365	\$13,417
92	1114	Avenue K	518.2	\$23,991	\$9,997	\$6,385	\$16,383
93	1136	Avenue K	517.5	\$46,464	\$21,032	\$17,391	\$38,423
94	1138	Avenue K	517.8	\$7,136	\$4,452	\$2,627	\$7,079
95	1140	Avenue K	518.1	\$20,680	\$8,908	\$5,647	\$14,555
96	1213	Avenue K	518.2	\$24,794	\$10,261	\$6,564	\$16,826
97	1216	Avenue K	519	\$16,868	\$4,797	\$2,876	\$7,673
98	1218	Avenue K	517.3	\$28,606	\$14,014	\$11,516	\$25,530
99	1238	Avenue K	518.4	\$29,208	\$11,714	\$7,549	\$19,262
100	1239	Avenue K	517.9	\$31,315	\$12,407	\$8,019	\$20,425
101	1202	Avenue L	518	\$27,956	\$11,302	\$7,270	\$18,571
102	1209	Avenue L	517.5	\$20,914	\$10,991	\$8,985	\$19,976
103	1211	Avenue L	517.3	\$19,911	\$10,597	\$8,655	\$19,252
104	1218	Avenue L	518.3	\$24,927	\$10,305	\$6,594	\$16,899
105	1221	Avenue L	518.8	\$31,950	\$8,160	\$5,447	\$13,608
106	1223	Avenue L	518.7	\$2,382	\$1,567	\$406	\$1,973
107	1224	Avenue L	518.2	\$22,921	\$9,645	\$6,147	\$15,792
108	1225	Avenue L	519	\$14,914	\$4,361	\$2,543	\$6,904
109	1229	Avenue L	519.3	\$22,921	\$6,147	\$3,908	\$10,055
110	1231	Avenue L	518.7	\$25,930	\$6,818	\$4,421	\$11,239
111	1232	Avenue L	519.1	\$33,956	\$8,608	\$5,789	\$14,397
112	1240	Avenue L	518.8	\$43,989	\$10,845	\$7,500	\$18,345
113	1100	Avenue L	517.5	\$44,257	\$20,165	\$16,665	\$36,830
114	1101	Avenue L	519.2	\$18,172	\$5,088	\$3,098	\$8,186
115	1103	Avenue L	519.2	\$20,312	\$5,565	\$3,463	\$9,028
116	1105	Avenue L	519.5	\$20,312	\$5,565	\$3,463	\$9,028

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
117	1106	Avenue L	519.2	\$32,050	\$8,183	\$5,465	\$13,647
118	1114	Avenue L	520.7	\$34,659	\$2,131	\$2,131	\$4,263
119	1115	Avenue L	519.1	\$47,668	\$11,665	\$8,127	\$19,793
120	1116	Avenue L	518.6	\$27,703	\$7,213	\$4,723	\$11,937
121	1117	Avenue L	519.2	\$38,237	\$9,562	\$6,519	\$16,082
122	1119	Avenue L	519.3	\$40,344	\$10,032	\$6,879	\$16,911
123	1120	Avenue L	518	\$45,762	\$17,160	\$11,240	\$28,400
124	1201	Avenue L	517.9	\$57,801	\$21,121	\$13,925	\$35,045
125	1204	Avenue L	517	\$3,111	\$3,995	\$3,128	\$7,123
126	1205	Avenue L	518.2	\$51,279	\$18,975	\$12,471	\$31,446
127	1206	Avenue L	516.2	\$15,313	\$10,420	\$8,790	\$19,210
128	1216	Avenue L	518.6	\$17,671	\$4,976	\$3,013	\$7,989
129	1220	Avenue L	518.3	\$39,240	\$15,014	\$9,786	\$24,800
130	1226	Avenue L	520.1	\$28,004	\$4,775	\$1,722	\$6,497
131	1228	Avenue L	519.2	\$54,389	\$13,164	\$9,273	\$22,438
132	1236	Avenue L	519.1	\$54,490	\$13,187	\$9,291	\$22,477
133	1239	Avenue L	519	\$54,791	\$13,254	\$9,342	\$22,596
134	1239	Avenue L	519	\$34,224	\$8,667	\$5,835	\$14,503
135	1242	Avenue L	518.8	\$35,629	\$8,981	\$6,075	\$15,055
136	1222	Avenue M	517.7	\$20,412	\$8,820	\$5,587	\$14,407
137	1230	Avenue M	519.5	\$32,973	\$8,388	\$5,622	\$14,010
138	1233	Avenue M	517.8	\$10,901	\$5,691	\$3,466	\$9,157
139	1237	Avenue M	518.1	\$27,937	\$11,295	\$7,265	\$18,561
140	1241	Avenue M	517.7	\$11,904	\$6,021	\$3,690	\$9,711
141	1043	Avenue M	518.5	\$32,719	\$12,869	\$8,332	\$21,201
142	1112	Avenue M	520.9	\$32,719	\$2,012	\$2,012	\$4,024
143	1115	Avenue M	521	\$25,830	\$1,589	\$1,589	\$3,177
144	1116	Avenue M	521.1	\$31,448	\$1,934	\$1,934	\$3,868
145	1117	Avenue M	519.6	\$35,227	\$6,006	\$2,166	\$8,173
146	1200	Avenue M	519.4	\$28,639	\$7,422	\$4,883	\$12,305
147	1202	Avenue M	519.3	\$42,484	\$10,509	\$7,244	\$17,753
148	1206	Avenue M	518.4	\$13,891	\$6,674	\$4,133	\$10,808
149	1207	Avenue M	519.5	\$23,690	\$6,318	\$4,039	\$10,357
150	1209	Avenue M	519.2	\$46,062	\$11,307	\$7,854	\$19,161
151	1211	Avenue M	519.3	\$41,247	\$10,233	\$7,033	\$17,266
152	1217	Avenue M	518.5	\$28,907	\$11,615	\$7,482	\$19,096
153	1228	Avenue M	519.9	\$42,551	\$7,255	\$2,617	\$9,872
154	1239	Avenue M	518.2	\$33,522	\$13,133	\$8,511	\$21,644
155	1242	Avenue M	520.1	\$32,569	\$5,553	\$2,003	\$7,556
156	1243	Avenue M	519.4	\$46,965	\$11,509	\$8,008	\$19,516

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
157	1034	Avenue S	521.7	\$20,412	\$1,255	-	\$1,255
158	1036	Avenue S	521.8	\$26,934	\$1,656	-	\$1,656
159	1038	Avenue S	521.8	\$16,901	\$1,039	-	\$1,039
160	1217	Avenue S	520.8	\$46,999	\$2,890	\$2,890	\$5,781
161	1278	Avenue S	518.5	\$16,901	\$7,665	\$4,804	\$12,469
162	1292	Avenue S	517.8	\$20,914	\$8,985	\$5,699	\$14,684
163	1311	Avenue S	518.7	\$27,937	\$7,265	\$4,763	\$12,029
164	1317	Avenue S	518.1	\$31,969	\$12,622	\$8,164	\$20,786
165	1337	Avenue S	518.7	\$38,973	\$9,726	\$6,645	\$16,371
166	1040	Avenue S	521.4	\$16,166	\$994	\$994	\$1,988
167	1042	Avenue S	521.5	\$59,305	\$3,647	\$3,647	\$7,295
168	1054	Avenue S	520.4	\$25,195	\$4,296	\$1,549	\$5,845
169	1205	Avenue S	519.1	\$34,324	\$8,690	\$5,852	\$14,542
170	1209	Avenue S	518.5	\$27,937	\$11,295	\$7,265	\$18,561
171	1213	Avenue S	518.4	\$42,752	\$16,170	\$10,569	\$26,739
172	1221	Avenue S	519.7	\$55,292	\$9,427	\$3,400	\$12,828
173	1225	Avenue S	519	\$61,546	\$14,760	\$10,494	\$25,254
174	1229	Avenue S	519.1	\$36,732	\$9,227	\$6,263	\$15,490
175	1239	Avenue S	519.5	\$36,381	\$9,148	\$6,203	\$15,351
176	1276	Avenue S	517.2	\$25,496	\$12,792	\$10,492	\$23,284
177	1280	Avenue S	519.7	\$18,172	\$3,098	\$1,118	\$4,216
178	1286	Avenue S	517.3	\$21,416	\$11,189	\$9,150	\$20,338
179	1288	Avenue S	517.8	\$32,820	\$12,902	\$8,354	\$21,256
180	1290	Avenue S	519.1	\$33,221	\$8,444	\$5,664	\$14,108
181	1305	Avenue S	518.1	\$40,344	\$15,377	\$10,032	\$25,409
182	1307	Avenue S	518	\$25,997	\$10,657	\$6,833	\$17,490
183	1313	Avenue S	518.4	\$40,745	\$15,509	\$10,122	\$25,631
184	1329	Avenue S	519.8	\$47,768	\$8,144	\$2,938	\$11,082
185	800	Avenue S	519	\$42,952	\$10,614	\$7,323	\$17,937
186	812	Avenue S	519.1	\$31,214	\$7,996	\$5,322	\$13,318
187	820	Avenue S	518.6	\$27,979	\$7,275	\$4,770	\$12,045
188	1208	Avenue T	523.5	\$23,442			
189	1217	Avenue T	521.5	\$25,448	\$1,565	\$1,565	\$3,130
190	1346	Avenue T	518.1	\$30,947	\$12,286	\$7,937	\$20,222
191	1605	Avenue T	518.7	\$43,989	\$10,845	\$7,500	\$18,345
192	1607	Avenue T	517.9	\$27,956	\$11,302	\$7,270	\$18,571
193	1609	Avenue T	519.1	\$19,911	\$5,476	\$3,395	\$8,870
194	1613	Avenue T	517.8	\$24,927	\$10,305	\$6,594	\$16,899
195	1615	Avenue T	518.1	\$23,924	\$9,975	\$6,370	\$16,346
196	1617	Avenue T	518.2	\$38,973	\$14,926	\$9,726	\$24,653

				EVENT	Mar 00 Flood	Jun 99 Flood	
				(feet)	520	519	
Number		Street	FFE (ft)	Total Acquisition Cost	Mar 00 Flood	Jun 99 Flood	Total Losses Avoided
197	1619	Avenue T	518.2	\$28,940	\$11,625	\$7,489	\$19,114
198	1715	Avenue T	518.5	\$44,992	\$16,907	\$11,069	\$27,975
199	1200	Avenue T	521.6	\$43,253	\$2,660	-	\$2,660
200	1204	Avenue T	522.8	\$22,737	-	-	-
201	1211	Avenue T	522.1	\$29,308	\$1,802	-	\$1,802
202	1212	Avenue T	523	\$24,041	--	-	-
203	1218	Avenue T	522.9	\$29,409	-	-	-
204	1225	Avenue T	523.5	\$34,023	-	-	-
205	1227	Avenue T	520.9	\$25,295	\$1,556	\$1,556	\$3,111
206	1228	Avenue T	520.5	\$19,075	\$3,252	\$1,173	\$4,425
207	1236	Avenue T	519.2	\$38,739	\$9,674	\$6,605	\$16,279
208	1240	Avenue T	519.7	\$42,451	\$7,238	\$2,611	\$9,849
209	1601	Avenue T	519.4	\$43,153	\$10,659	\$7,358	\$18,016
210	1608	Avenue U	519.3	\$26,953	\$7,046	\$4,595	\$11,641
211	1706	Avenue U	518.1	\$39,976	\$15,256	\$9,950	\$25,206
212	1726	Avenue U	518	\$28,940	\$11,625	\$7,489	\$19,114
213	1600	Avenue U	518.3	\$38,739	\$14,849	\$9,674	\$24,523
214	1229	Avenue V	519.2	\$13,891	\$4,133	\$2,368	\$6,502
215	1221	Avenue V	518.3	\$15,062	\$7,060	\$4,394	\$11,454
216	1227	Avenue V	519	\$35,729	\$9,003	\$6,092	\$15,095
217	1235	Avenue V	518.4	\$23,851	\$9,951	\$6,354	\$16,305
FEMA - HMGP 75% Share				<u>\$5,302,820</u>			
City of Birmingham 25% Share				<u>\$1,767,607</u>			
Total				<u>\$7,070,426</u>	<u>\$2,038,162</u>	<u>\$1,352,732</u>	<u>\$3,390,895</u>
<u>Percentage of Losses Avoided To Acquisition Costs</u>					29%	19%	48%

Appendix C

Normalized Estimates for Cumulative Losses Avoided Following Six Floods, Since the City of Birmingham and USACE Acquisitions (1989-1994)

(Financial data normalized to the year-2000 (over 10-years) for the USACE phase of the project. The discount rate used for these calculations is 5%.)

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
1	101	\$72,039	\$20,153	\$16,655	\$18,362	\$19,280	\$20,244	\$24,496	\$119,189
2	102	\$58,295	\$16,837	\$13,878	\$15,301	\$16,066	\$16,869	\$20,465	\$99,417
3	103	\$8,910	\$4,922	\$3,904	\$4,304	\$4,519	\$4,745	\$5,983	\$28,377
4	104	\$67,078	\$18,956	\$15,652	\$17,257	\$18,120	\$19,026	\$23,041	\$112,051
5	106	\$48,820	\$14,551	\$11,965	\$13,191	\$13,851	\$14,543	\$17,687	\$85,787
6	107	\$59,476	\$17,122	\$14,117	\$15,564	\$16,342	\$17,159	\$20,812	\$101,116
7	108	\$34,656	\$11,134	\$9,104	\$10,037	\$10,539	\$11,066	\$13,533	\$65,413
8	109	\$72,957	\$20,374	\$16,840	\$18,566	\$19,494	\$20,469	\$24,765	\$120,508
9	111	\$60,520	\$17,374	\$14,328	\$15,796	\$16,586	\$17,416	\$21,118	\$102,618
10	112	\$74,191	\$20,672	\$17,089	\$18,841	\$19,783	\$20,772	\$25,127	\$122,284
11	113	\$88,341	\$24,086	\$19,947	\$21,992	\$23,091	\$24,246	\$29,277	\$142,639
12	114	\$33,697	\$10,902	\$8,910	\$9,824	\$10,315	\$10,830	\$13,252	\$64,033
13	116	\$90,690	\$24,653	\$20,422	\$22,515	\$23,641	\$24,823	\$29,966	\$146,018
14	117	\$75,437	\$20,973	\$17,341	\$19,118	\$20,074	\$21,078	\$25,493	\$124,077
15	118	\$61,370	\$17,579	\$14,500	\$15,986	\$16,785	\$17,624	\$21,367	\$103,841
16	119	\$60,906	\$17,467	\$14,406	\$15,882	\$16,677	\$17,510	\$21,231	\$103,173
17	121	\$73,079	\$20,404	\$16,864	\$18,593	\$19,523	\$20,499	\$24,801	\$120,684
18	122	\$62,877	\$17,942	\$14,804	\$16,321	\$17,137	\$17,994	\$21,809	\$106,008
19	126	\$41,209	\$12,715	\$10,428	\$11,496	\$12,071	\$12,675	\$15,455	\$74,839
20	127	\$34,243	\$11,034	\$9,020	\$9,945	\$10,442	\$10,964	\$13,412	\$64,818
21	128	\$17,103	\$6,899	\$5,559	\$6,128	\$6,435	\$6,757	\$8,385	\$40,163
22	129	\$62,950	\$17,960	\$14,819	\$16,338	\$17,155	\$18,012	\$21,831	\$106,114
23	131	\$62,224	\$17,785	\$14,672	\$16,176	\$16,985	\$17,834	\$21,618	\$105,069
24	132	\$64,380	\$18,305	\$15,108	\$16,656	\$17,489	\$18,363	\$22,250	\$108,171
25	133	\$35,064	\$11,232	\$9,186	\$10,128	\$10,634	\$11,166	\$13,652	\$65,999
26	134	\$89,798	\$24,438	\$20,241	\$22,316	\$23,432	\$24,603	\$29,704	\$144,734
27	136	\$23,173	\$8,363	\$6,785	\$7,480	\$7,854	\$8,247	\$10,165	\$48,893
28	137	\$44,998	\$13,629	\$11,193	\$12,340	\$12,957	\$13,605	\$16,566	\$80,290
29	138	\$63,558	\$18,107	\$14,941	\$16,473	\$17,297	\$18,161	\$22,009	\$106,988
30	139	\$50,815	\$15,032	\$12,368	\$13,635	\$14,317	\$15,033	\$18,272	\$88,657
31	141	\$25,453	\$8,913	\$7,245	\$7,988	\$8,387	\$8,807	\$10,834	\$52,174
32	142	\$74,553	\$20,759	\$17,162	\$18,921	\$19,867	\$20,861	\$25,233	\$122,804
33	147	\$14,377	\$6,241	\$5,008	\$5,521	\$5,797	\$6,087	\$7,586	\$36,240
34	200	\$78,926	\$21,815	\$18,046	\$19,895	\$20,890	\$21,934	\$26,516	\$129,096
35	201	\$51,268	\$15,141	\$12,459	\$13,736	\$14,423	\$15,144	\$18,405	\$89,309
36	202	\$34,080	\$10,995	\$8,988	\$9,909	\$10,404	\$10,924	\$13,364	\$64,583
37	203	\$40,297	\$12,495	\$10,243	\$11,293	\$11,858	\$12,451	\$15,187	\$73,527
38	204	\$59,873	\$17,218	\$14,197	\$15,652	\$16,435	\$17,257	\$20,928	\$101,688
39	206	\$51,494	\$15,196	\$12,505	\$13,787	\$14,476	\$15,200	\$18,471	\$89,634
40	207	\$59,391	\$17,101	\$14,100	\$15,545	\$16,322	\$17,138	\$20,787	\$100,994

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>							
<u>No.</u>	<u>Tract</u>	<u>Normalized Acquisition Cost</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
41	208	\$41,060	\$12,679	\$10,397	\$11,463	\$12,036	\$12,638	\$15,411	\$74,624
42	209	\$74,149	\$20,662	\$17,081	\$18,831	\$19,773	\$20,762	\$25,115	\$122,223
43	211	\$41,374	\$12,754	\$10,461	\$11,533	\$12,110	\$12,715	\$15,503	\$75,076
44	212	\$57,006	\$16,526	\$13,618	\$15,014	\$15,765	\$16,553	\$20,087	\$97,564
45	213	\$23,456	\$8,431	\$6,842	\$7,543	\$7,920	\$8,316	\$10,248	\$49,301
46	214	\$55,400	\$16,139	\$13,294	\$14,656	\$15,389	\$16,159	\$19,616	\$95,253
47	216	\$64,164	\$18,253	\$15,064	\$16,608	\$17,438	\$18,310	\$22,186	\$107,860
48	217	\$25,430	\$8,908	\$7,241	\$7,983	\$8,382	\$8,801	\$10,827	\$52,141
49	218	\$82,572	\$22,694	\$18,782	\$20,707	\$21,742	\$22,829	\$27,585	\$134,340
50	219	\$57,371	\$16,614	\$13,692	\$15,095	\$15,850	\$16,643	\$20,194	\$98,088
51	221	\$53,490	\$15,678	\$12,908	\$14,231	\$14,943	\$15,690	\$19,056	\$92,505
52	222	\$81,924	\$22,538	\$18,651	\$20,563	\$21,591	\$22,670	\$27,395	\$133,407
53	223	\$56,524	\$16,410	\$13,521	\$14,907	\$15,652	\$16,435	\$19,946	\$96,870
54	224	\$64,125	\$18,243	\$15,056	\$16,599	\$17,429	\$18,301	\$22,175	\$107,803
55	226	\$30,866	\$10,219	\$8,338	\$9,193	\$9,653	\$10,135	\$12,421	\$59,960
56	227	\$37,344	\$11,782	\$9,647	\$10,636	\$11,167	\$11,726	\$14,321	\$69,279
57	228	\$34,065	\$10,991	\$8,985	\$9,905	\$10,401	\$10,921	\$13,360	\$64,562
58	229	\$53,640	\$15,714	\$12,938	\$14,264	\$14,978	\$15,726	\$19,100	\$92,720
59	231	\$56,462	\$16,395	\$13,508	\$14,893	\$15,638	\$16,419	\$19,928	\$96,781
60	232	\$47,806	\$14,306	\$11,760	\$12,965	\$13,614	\$14,294	\$17,389	\$84,329
61	233	\$62,154	\$17,768	\$14,658	\$16,160	\$16,968	\$17,817	\$21,597	\$104,968
62	234	\$63,395	\$18,067	\$14,909	\$16,437	\$17,259	\$18,121	\$21,961	\$106,754
63	236	\$46,301	\$13,943	\$11,456	\$12,630	\$13,262	\$13,925	\$16,948	\$82,164
64	237	\$30,095	\$10,033	\$8,183	\$9,022	\$9,473	\$9,946	\$12,195	\$58,852
65	238	\$61,246	\$17,549	\$14,475	\$15,958	\$16,756	\$17,594	\$21,331	\$103,663
66	239	\$42,351	\$12,990	\$10,658	\$11,751	\$12,338	\$12,955	\$15,790	\$76,482
67	241	\$75,832	\$21,068	\$17,420	\$19,206	\$20,166	\$21,175	\$25,608	\$124,644
68	242	\$79,529	\$21,960	\$18,167	\$20,029	\$21,031	\$22,082	\$26,693	\$129,963
69	243	\$69,116	\$19,448	\$16,064	\$17,711	\$18,596	\$19,526	\$23,639	\$114,983
70	244	\$56,769	\$16,469	\$13,570	\$14,961	\$15,709	\$16,495	\$20,018	\$97,221
71	246	\$65,508	\$18,577	\$15,335	\$16,907	\$17,752	\$18,640	\$22,581	\$109,793
72	247	\$60,647	\$17,404	\$14,354	\$15,825	\$16,616	\$17,447	\$21,155	\$102,801
73	248	\$28,594	\$9,671	\$7,879	\$8,687	\$9,121	\$9,578	\$11,755	\$56,692
74	249	\$17,641	\$7,028	\$5,667	\$6,248	\$6,561	\$6,889	\$8,543	\$40,936
75	251	\$47,598	\$14,256	\$11,718	\$12,919	\$13,565	\$14,243	\$17,328	\$84,029
76	252	\$23,173	\$8,363	\$6,785	\$7,480	\$7,854	\$8,247	\$10,165	\$48,893
77	253	\$14,865	\$6,359	\$5,107	\$5,630	\$5,912	\$6,207	\$7,729	\$36,943
78	254	\$10,295	\$5,256	\$4,183	\$4,612	\$4,843	\$5,085	\$6,389	\$30,368
79	256	\$6,288	\$4,289	\$3,374	\$3,720	\$3,906	\$4,101	\$5,214	\$24,604
80	257	\$60,166	\$17,288	\$14,256	\$15,718	\$16,504	\$17,329	\$21,014	\$102,109
81	258	\$94,158	\$25,490	\$21,122	\$23,287	\$24,451	\$25,674	\$30,983	\$151,007

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>							
<u>No.</u>	<u>Tract</u>	<u>Normalized Acquisition Cost</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
82	259	\$29,015	\$9,773	\$7,965	\$8,781	\$9,220	\$9,681	\$11,879	\$57,298
83	301	\$62,976	\$17,966	\$14,824	\$16,343	\$17,161	\$18,019	\$21,838	\$106,151
84	302	\$48,979	\$14,589	\$11,997	\$13,227	\$13,888	\$14,582	\$17,733	\$86,016
85	303	\$60,554	\$17,382	\$14,335	\$15,804	\$16,594	\$17,424	\$21,128	\$102,667
86	304	\$53,623	\$15,710	\$12,935	\$14,261	\$14,974	\$15,722	\$19,095	\$92,697
87	306	\$54,848	\$16,005	\$13,182	\$14,533	\$15,260	\$16,023	\$19,455	\$94,459
88	307	\$75,389	\$20,961	\$17,331	\$19,107	\$20,063	\$21,066	\$25,478	\$124,006
89	308	\$78,819	\$21,789	\$18,024	\$19,871	\$20,865	\$21,908	\$26,484	\$128,941
90	309	\$64,820	\$18,411	\$15,196	\$16,754	\$17,592	\$18,471	\$22,379	\$108,804
91	311	\$49,235	\$14,651	\$12,049	\$13,284	\$13,948	\$14,645	\$17,808	\$86,384
92	312	\$7,330	\$4,541	\$3,585	\$3,952	\$4,150	\$4,357	\$5,519	\$26,104
93	314	\$36,753	\$11,639	\$9,527	\$10,504	\$11,029	\$11,581	\$14,148	\$68,429
94	316	\$56,003	\$16,284	\$13,416	\$14,791	\$15,530	\$16,307	\$19,793	\$96,120
95	317	\$30,584	\$10,151	\$8,282	\$9,130	\$9,587	\$10,066	\$12,339	\$59,555
96	318	\$96,295	\$26,005	\$21,554	\$23,763	\$24,951	\$26,199	\$31,609	\$154,081
97	321	\$38,615	\$12,089	\$9,903	\$10,919	\$11,465	\$12,038	\$14,694	\$71,107
98	322	\$36,235	\$11,514	\$9,423	\$10,389	\$10,908	\$11,453	\$13,996	\$67,683
99	323	\$14,865	\$6,359	\$5,107	\$5,630	\$5,912	\$6,207	\$7,729	\$36,943
100	324	\$15,028	\$6,398	\$5,140	\$5,666	\$5,950	\$6,247	\$7,777	\$37,178
101	326	\$14,377	\$6,241	\$5,008	\$5,521	\$5,797	\$6,087	\$7,586	\$36,240
102	327	\$55,912	\$16,262	\$13,397	\$14,770	\$15,509	\$16,284	\$19,766	\$95,989
103	329	\$64,178	\$18,256	\$15,067	\$16,611	\$17,442	\$18,314	\$22,191	\$107,881
104	331	\$87,636	\$23,916	\$19,805	\$21,835	\$22,926	\$24,073	\$29,070	\$141,625
105	332	\$28,344	\$9,611	\$7,829	\$8,632	\$9,063	\$9,516	\$11,682	\$56,333
106	333	\$15,028	\$6,398	\$5,140	\$5,666	\$5,950	\$6,247	\$7,777	\$37,178
107	334	\$25,305	\$8,877	\$7,215	\$7,955	\$8,353	\$8,770	\$10,791	\$51,961
108	336	\$49,807	\$14,789	\$12,164	\$13,411	\$14,081	\$14,785	\$17,976	\$87,207
109	337	\$75,418	\$20,968	\$17,337	\$19,114	\$20,070	\$21,073	\$25,487	\$124,049
110	338	\$28,670	\$9,689	\$7,895	\$8,704	\$9,139	\$9,596	\$11,778	\$56,802
111	339	\$23,173	\$8,363	\$6,785	\$7,480	\$7,854	\$8,247	\$10,165	\$48,893
112	340	\$17,102	\$6,898	\$5,558	\$6,128	\$6,435	\$6,756	\$8,385	\$40,160
113	341	\$48,867	\$14,562	\$11,974	\$13,202	\$13,862	\$14,555	\$17,700	\$85,855
114	343	\$59,248	\$17,067	\$14,071	\$15,513	\$16,289	\$17,103	\$20,745	\$100,788
115	344	\$33,435	\$10,839	\$8,857	\$9,765	\$10,253	\$10,766	\$13,175	\$63,655
116	346	\$80,563	\$22,210	\$18,376	\$20,260	\$21,273	\$22,336	\$26,996	\$131,451
117	347	\$18,620	\$7,265	\$5,865	\$6,466	\$6,789	\$7,129	\$8,830	\$42,344
118	348	\$71,715	\$20,075	\$16,589	\$18,289	\$19,204	\$20,164	\$24,401	\$118,722
119	352	\$91,055	\$24,741	\$20,495	\$22,596	\$23,726	\$24,912	\$30,073	\$146,543
120	353	\$27,245	\$9,346	\$7,607	\$8,387	\$8,806	\$9,246	\$11,360	\$54,751
121	354	\$39,185	\$12,226	\$10,019	\$11,046	\$11,598	\$12,178	\$14,861	\$71,927
122	403	\$74,045	\$20,637	\$17,060	\$18,808	\$19,749	\$20,736	\$25,084	\$122,073

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						<u>Total Losses Avoided</u>
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
123	404	\$110,602	\$29,457	\$24,443	\$26,949	\$28,296	\$29,711	\$35,805	\$174,661
124	408	\$62,859	\$17,938	\$14,800	\$16,317	\$17,133	\$17,990	\$21,804	\$105,983
125	409	\$74,136	\$20,659	\$17,078	\$18,828	\$19,770	\$20,758	\$25,111	\$122,204
126	411	\$172,723	\$44,445	\$36,990	\$40,782	\$42,821	\$44,962	\$54,023	\$264,023
127	412	\$75,765	\$21,052	\$17,407	\$19,191	\$20,151	\$21,158	\$25,589	\$124,548
128	413	\$77,700	\$21,519	\$17,798	\$19,622	\$20,603	\$21,633	\$26,156	\$127,331
129	414	\$68,422	\$19,280	\$15,924	\$17,556	\$18,434	\$19,356	\$23,435	\$113,985
130	416	\$53,610	\$15,707	\$12,932	\$14,258	\$14,971	\$15,719	\$19,091	\$92,678
131	417	\$56,461	\$16,394	\$13,508	\$14,893	\$15,637	\$16,419	\$19,927	\$96,779
132	418	\$81,508	\$22,438	\$18,567	\$20,470	\$21,494	\$22,568	\$27,273	\$132,810
133	419	\$81,753	\$22,496	\$18,616	\$20,525	\$21,551	\$22,628	\$27,345	\$133,161
134	421	\$76,209	\$21,159	\$17,497	\$19,290	\$20,255	\$21,267	\$25,719	\$125,187
135	422	\$83,541	\$22,928	\$18,978	\$20,923	\$21,969	\$23,067	\$27,869	\$135,734
136	423	\$92,072	\$24,986	\$20,701	\$22,822	\$23,964	\$25,162	\$30,371	\$148,005
137	424	\$79,334	\$21,913	\$18,128	\$19,986	\$20,985	\$22,034	\$26,635	\$129,682
138	426	\$66,120	\$18,725	\$15,459	\$17,044	\$17,896	\$18,790	\$22,760	\$110,674
139	427	\$68,063	\$19,194	\$15,851	\$17,476	\$18,350	\$19,268	\$23,330	\$113,469
140	428	\$86,400	\$23,618	\$19,555	\$21,559	\$22,637	\$23,769	\$28,707	\$139,846
141	429	\$90,951	\$24,716	\$20,474	\$22,573	\$23,701	\$24,887	\$30,042	\$146,393
142	431	\$73,981	\$20,621	\$17,047	\$18,794	\$19,734	\$20,720	\$25,066	\$121,982
143	432	\$107,157	\$28,626	\$23,747	\$26,182	\$27,491	\$28,865	\$34,795	\$169,705
144	433	\$63,384	\$18,065	\$14,906	\$16,434	\$17,256	\$18,119	\$21,958	\$106,737
145	434	\$81,072	\$22,332	\$18,479	\$20,373	\$21,392	\$22,461	\$27,145	\$132,182
146	436	\$54,140	\$15,834	\$13,039	\$14,376	\$15,094	\$15,849	\$19,247	\$93,440
147	437	\$54,535	\$15,930	\$13,119	\$14,464	\$15,187	\$15,946	\$19,363	\$94,009
148	438	\$84,424	\$23,141	\$19,156	\$21,119	\$22,175	\$23,284	\$28,128	\$137,004
149	439	\$146,736	\$38,175	\$31,742	\$34,995	\$36,745	\$38,582	\$46,402	\$226,640
150	441	\$77,951	\$21,579	\$17,848	\$19,678	\$20,662	\$21,695	\$26,230	\$127,692
151	442	\$73,532	\$20,513	\$16,956	\$18,694	\$19,629	\$20,610	\$24,934	\$121,335
152	443	\$75,853	\$21,073	\$17,425	\$19,211	\$20,171	\$21,180	\$25,614	\$124,674
153	444	\$92,891	\$25,184	\$20,866	\$23,005	\$24,155	\$25,363	\$30,611	\$149,184
154	446	\$71,696	\$20,070	\$16,585	\$18,285	\$19,199	\$20,159	\$24,395	\$118,694
155	447	\$69,562	\$19,555	\$16,154	\$17,810	\$18,700	\$19,635	\$23,770	\$115,625
156	448	\$79,640	\$21,987	\$18,190	\$20,054	\$21,057	\$22,110	\$26,725	\$130,122
157	449	\$87,174	\$23,804	\$19,711	\$21,732	\$22,818	\$23,959	\$28,934	\$140,959
158	451	\$79,513	\$21,956	\$18,164	\$20,026	\$21,027	\$22,078	\$26,688	\$129,939
159	452	\$55,671	\$16,204	\$13,348	\$14,717	\$15,452	\$16,225	\$19,696	\$95,642
160	453	\$66,915	\$18,917	\$15,620	\$17,221	\$18,082	\$18,986	\$22,993	\$111,817
161	454	\$75,885	\$21,081	\$17,431	\$19,218	\$20,179	\$21,188	\$25,624	\$124,721
162	456	\$76,501	\$21,229	\$17,556	\$19,355	\$20,323	\$21,339	\$25,805	\$125,607
163	502	\$66,426	\$18,799	\$15,521	\$17,112	\$17,967	\$18,866	\$22,850	\$111,114

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
164	503	\$62,914	\$17,951	\$14,811	\$16,330	\$17,146	\$18,003	\$21,820	\$106,062
165	504	\$61,429	\$17,593	\$14,511	\$15,999	\$16,799	\$17,639	\$21,384	\$103,925
166	601	\$72,531	\$20,272	\$16,754	\$18,471	\$19,395	\$20,364	\$24,640	\$119,896
167	602	\$24,922	\$8,785	\$7,138	\$7,870	\$8,263	\$8,676	\$10,678	\$51,410
168	603	\$24,922	\$8,785	\$7,138	\$7,870	\$8,263	\$8,676	\$10,678	\$51,410
169	604	\$27,435	\$9,391	\$7,646	\$8,429	\$8,851	\$9,293	\$11,415	\$55,026
170	606	\$28,831	\$9,728	\$7,928	\$8,740	\$9,177	\$9,636	\$11,825	\$57,034
171	607	\$12,727	\$5,843	\$4,675	\$5,154	\$5,412	\$5,682	\$7,102	\$33,867
172	608	\$77,798	\$21,542	\$17,818	\$19,644	\$20,626	\$21,657	\$26,185	\$127,472
173	609	\$30,918	\$10,232	\$8,349	\$9,205	\$9,665	\$10,148	\$12,437	\$60,035
174	611	\$30,135	\$10,043	\$8,191	\$9,030	\$9,482	\$9,956	\$12,207	\$58,908
175	612	\$36,999	\$11,699	\$9,577	\$10,559	\$11,087	\$11,641	\$14,220	\$68,782
176	613	\$27,018	\$9,291	\$7,561	\$8,336	\$8,753	\$9,191	\$11,293	\$54,426
177	614	\$63,317	\$18,049	\$14,893	\$16,419	\$17,240	\$18,102	\$21,938	\$106,641
178	616	\$74,266	\$20,690	\$17,104	\$18,857	\$19,800	\$20,790	\$25,149	\$122,392
179	617	\$413,840	\$102,619	\$85,691	\$94,474	\$99,198	\$104,157	\$124,734	\$610,872
180	619	\$18,864	\$7,324	\$5,914	\$6,521	\$6,847	\$7,189	\$8,902	\$42,696
181	621	\$54,584	\$15,942	\$13,129	\$14,475	\$15,198	\$15,958	\$19,377	\$94,079
182	622	\$33,901	\$10,951	\$8,951	\$9,869	\$10,362	\$10,880	\$13,311	\$64,326
183	623	\$63,439	\$18,078	\$14,917	\$16,446	\$17,269	\$18,132	\$21,974	\$106,817
184	624	\$38,214	\$11,992	\$9,823	\$10,829	\$11,371	\$11,939	\$14,576	\$70,530
185	626	\$71,266	\$19,966	\$16,498	\$18,189	\$19,099	\$20,054	\$24,269	\$118,076
186	627	\$98,382	\$26,509	\$21,975	\$24,228	\$25,439	\$26,711	\$32,221	\$157,083
187	628	\$102,521	\$27,507	\$22,811	\$25,149	\$26,407	\$27,727	\$33,435	\$163,037
188	629	\$66,804	\$18,890	\$15,597	\$17,196	\$18,056	\$18,958	\$22,961	\$111,658
189	631	\$32,290	\$10,563	\$8,626	\$9,510	\$9,986	\$10,485	\$12,839	\$62,008
190	632	\$34,788	\$11,166	\$9,131	\$10,067	\$10,570	\$11,098	\$13,572	\$65,603
191	633	\$47,046	\$14,123	\$11,606	\$12,796	\$13,436	\$14,108	\$17,166	\$83,235
192	634	\$70,212	\$19,712	\$16,285	\$17,955	\$18,852	\$19,795	\$23,960	\$116,560
193	636	\$28,831	\$9,728	\$7,928	\$8,740	\$9,177	\$9,636	\$11,825	\$57,034
194	637	\$33,161	\$10,773	\$8,802	\$9,704	\$10,189	\$10,699	\$13,095	\$63,262
195	638	\$44,852	\$13,593	\$11,163	\$12,307	\$12,923	\$13,569	\$16,523	\$80,079
196	639	\$71,842	\$20,105	\$16,615	\$18,318	\$19,234	\$20,195	\$24,438	\$118,905
197	641	\$51,511	\$15,200	\$12,508	\$13,790	\$14,480	\$15,204	\$18,476	\$89,658
198	642	\$9,464	\$5,056	\$4,016	\$4,427	\$4,649	\$4,881	\$6,145	\$29,173
199	643	\$25,178	\$8,847	\$7,190	\$7,926	\$8,323	\$8,739	\$10,753	\$51,778
200	644	\$36,043	\$11,468	\$9,384	\$10,346	\$10,863	\$11,406	\$13,940	\$67,407
201	646	\$84,035	\$23,047	\$19,077	\$21,033	\$22,084	\$23,189	\$28,014	\$136,444
202	647	\$96,756	\$26,116	\$21,647	\$23,866	\$25,059	\$26,312	\$31,745	\$154,744
203	648	\$55,358	\$16,128	\$13,285	\$14,647	\$15,379	\$16,148	\$19,604	\$95,192
204	649	\$38,854	\$12,146	\$9,952	\$10,972	\$11,520	\$12,097	\$14,764	\$71,451

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
205	651	\$25,101	\$8,828	\$7,174	\$7,909	\$8,305	\$8,720	\$10,731	\$51,668
206	652	\$40,041	\$12,433	\$10,192	\$11,236	\$11,798	\$12,388	\$15,112	\$73,159
207	653	\$63,090	\$17,994	\$14,847	\$16,369	\$17,187	\$18,047	\$21,872	\$106,315
208	654	\$6,582	\$4,360	\$3,434	\$3,786	\$3,975	\$4,174	\$5,300	\$25,028
209	655	\$40,691	\$12,590	\$10,323	\$11,381	\$11,950	\$12,548	\$15,303	\$74,094
210	656	\$108,719	\$29,003	\$24,063	\$26,529	\$27,856	\$29,249	\$35,253	\$171,952
211	657	\$87,382	\$23,855	\$19,753	\$21,778	\$22,867	\$24,010	\$28,996	\$141,259
212	658	\$47,282	\$14,180	\$11,654	\$12,849	\$13,491	\$14,166	\$17,236	\$83,575
213	659	\$17,103	\$6,899	\$5,559	\$6,128	\$6,435	\$6,757	\$8,385	\$40,163
214	661	\$58,243	\$16,824	\$13,868	\$15,289	\$16,054	\$16,857	\$20,450	\$99,342
215	662	\$52,095	\$15,341	\$12,626	\$13,920	\$14,616	\$15,347	\$18,647	\$90,499
216	663	\$49,349	\$14,679	\$12,072	\$13,309	\$13,974	\$14,673	\$17,842	\$86,548
217	664	\$41,262	\$12,727	\$10,438	\$11,508	\$12,083	\$12,688	\$15,470	\$74,914
218	666	\$66,485	\$18,813	\$15,533	\$17,125	\$17,981	\$18,880	\$22,867	\$111,199
219	667	\$38,212	\$11,992	\$9,822	\$10,829	\$11,370	\$11,939	\$14,576	\$70,528
220	668	\$59,248	\$17,067	\$14,071	\$15,513	\$16,289	\$17,103	\$20,745	\$100,788
221	669	\$36,886	\$11,672	\$9,554	\$10,534	\$11,060	\$11,613	\$14,187	\$68,621
222	671	\$26,062	\$9,060	\$7,368	\$8,123	\$8,530	\$8,956	\$11,013	\$53,050
223	672	\$24,694	\$8,730	\$7,092	\$7,819	\$8,210	\$8,620	\$10,611	\$51,082
224	673	\$30,786	\$10,200	\$8,322	\$9,175	\$9,634	\$10,116	\$12,398	\$59,845
225	674	\$42,330	\$12,985	\$10,654	\$11,746	\$12,333	\$12,950	\$15,783	\$76,452
226	701	\$434,237	\$107,540	\$89,810	\$99,016	\$103,967	\$109,165	\$130,715	\$640,213
227	702	\$60,038	\$17,257	\$14,230	\$15,689	\$16,474	\$17,297	\$20,976	\$101,924
228	703	\$22,174	\$8,122	\$6,583	\$7,258	\$7,621	\$8,002	\$9,872	\$47,457
229	704	\$69,862	\$19,628	\$16,215	\$17,877	\$18,771	\$19,709	\$23,857	\$116,056
230	706	\$65,482	\$18,571	\$15,330	\$16,901	\$17,746	\$18,634	\$22,573	\$109,755
231	707	\$45,195	\$13,676	\$11,233	\$12,384	\$13,003	\$13,653	\$16,624	\$80,573
232	708	\$91,111	\$24,754	\$20,506	\$22,608	\$23,739	\$24,926	\$30,089	\$146,623
233	709	\$100,218	\$26,952	\$22,346	\$24,636	\$25,868	\$27,162	\$32,760	\$159,723
234	711	\$54,345	\$15,884	\$13,081	\$14,421	\$15,142	\$15,900	\$19,307	\$93,735
235	712	\$53,242	\$15,618	\$12,858	\$14,176	\$14,885	\$15,629	\$18,984	\$92,149
236	713	\$66,532	\$18,824	\$15,542	\$17,135	\$17,992	\$18,892	\$22,881	\$111,266
237	714	\$167,287	\$43,133	\$35,893	\$39,571	\$41,550	\$43,628	\$52,429	\$256,204
238	716	\$58,878	\$16,978	\$13,996	\$15,431	\$16,202	\$17,013	\$20,636	\$100,256
239	717	\$62,100	\$17,755	\$14,647	\$16,148	\$16,956	\$17,804	\$21,581	\$104,891
240	718	\$56,062	\$16,298	\$13,427	\$14,804	\$15,544	\$16,321	\$19,810	\$96,205
241	719	\$33,552	\$10,867	\$8,881	\$9,791	\$10,281	\$10,795	\$13,209	\$63,824
242	721	\$73,175	\$20,427	\$16,884	\$18,614	\$19,545	\$20,522	\$24,829	\$120,822
243	722	\$114,252	\$30,338	\$25,181	\$27,762	\$29,150	\$30,607	\$36,876	\$179,912
244	723	\$59,836	\$17,209	\$14,190	\$15,644	\$16,426	\$17,248	\$20,917	\$101,634
245	724	\$75,964	\$21,100	\$17,447	\$19,235	\$20,197	\$21,207	\$25,647	\$124,833

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>							
<u>No.</u>	<u>Tract</u>	<u>Normalized Acquisition Cost</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
246	726	\$78,856	\$21,798	\$18,031	\$19,880	\$20,874	\$21,917	\$26,495	\$128,995
247	727	\$31,920	\$10,473	\$8,551	\$9,428	\$9,899	\$10,394	\$12,731	\$61,476
248	728	\$50,212	\$14,887	\$12,246	\$13,501	\$14,176	\$14,885	\$18,095	\$87,790
249	729	\$80,059	\$22,088	\$18,274	\$20,147	\$21,155	\$22,212	\$26,848	\$130,724
250	731	\$198,725	\$50,718	\$42,242	\$46,572	\$48,901	\$51,346	\$61,648	\$301,427
251	732	\$9,366	\$5,032	\$3,996	\$4,406	\$4,626	\$4,857	\$6,116	\$29,033
252	733	\$52,994	\$15,558	\$12,808	\$14,121	\$14,827	\$15,568	\$18,911	\$91,792
253	734	\$74,289	\$20,696	\$17,109	\$18,863	\$19,806	\$20,796	\$25,156	\$122,425
254	736	\$56,889	\$16,498	\$13,595	\$14,988	\$15,737	\$16,524	\$20,053	\$97,395
255	737	\$58,722	\$16,940	\$13,965	\$15,396	\$16,166	\$16,974	\$20,590	\$100,031
256	738	\$36,914	\$11,678	\$9,560	\$10,540	\$11,067	\$11,620	\$14,195	\$68,661
257	739	\$59,917	\$17,228	\$14,206	\$15,662	\$16,445	\$17,268	\$20,941	\$101,751
258	741	\$58,153	\$16,803	\$13,850	\$15,269	\$16,033	\$16,835	\$20,424	\$99,213
259	742	\$38,618	\$12,089	\$9,904	\$10,919	\$11,465	\$12,039	\$14,695	\$71,111
260	743	\$107,989	\$28,827	\$23,916	\$26,367	\$27,685	\$29,070	\$35,039	\$170,903
261	744	\$29,174	\$9,811	\$7,997	\$8,816	\$9,257	\$9,720	\$11,925	\$57,526
262	746	\$54,850	\$16,006	\$13,183	\$14,534	\$15,261	\$16,024	\$19,455	\$94,461
263	747	\$67,164	\$18,977	\$15,670	\$17,276	\$18,140	\$19,047	\$23,066	\$112,176
264	748	\$72,053	\$20,156	\$16,657	\$18,365	\$19,283	\$20,247	\$24,500	\$119,208
265	749	\$66,781	\$18,884	\$15,593	\$17,191	\$18,050	\$18,953	\$22,954	\$111,625
266	751	\$134,602	\$35,247	\$29,291	\$32,293	\$33,908	\$35,603	\$42,843	\$209,186
267	752	\$86,025	\$23,527	\$19,479	\$21,476	\$22,550	\$23,677	\$28,598	\$139,307
268	753	\$300,668	\$75,314	\$62,832	\$69,273	\$72,736	\$76,373	\$91,544	\$448,072
269	754	\$40,556	\$12,557	\$10,296	\$11,351	\$11,918	\$12,514	\$15,263	\$73,900
270	756	\$65,170	\$18,496	\$15,267	\$16,832	\$17,674	\$18,557	\$22,482	\$109,308
271	757	\$38,865	\$12,149	\$9,954	\$10,974	\$11,523	\$12,099	\$14,767	\$71,468
272	758	\$100,829	\$27,099	\$22,469	\$24,772	\$26,011	\$27,312	\$32,939	\$160,602
273	759	\$75,317	\$20,944	\$17,317	\$19,091	\$20,046	\$21,048	\$25,457	\$123,903
274	761	\$75,289	\$20,937	\$17,311	\$19,085	\$20,040	\$21,042	\$25,449	\$123,863
275	762	\$62,077	\$17,749	\$14,642	\$16,143	\$16,950	\$17,798	\$21,575	\$104,858
276	763	\$12,748	\$5,848	\$4,679	\$5,159	\$5,416	\$5,687	\$7,108	\$33,897
277	764	\$25,758	\$8,987	\$7,307	\$8,056	\$8,458	\$8,881	\$10,923	\$52,612
278	766	\$45,684	\$13,794	\$11,331	\$12,493	\$13,117	\$13,773	\$16,767	\$81,276
279	767	\$77,143	\$21,384	\$17,685	\$19,498	\$20,473	\$21,497	\$25,993	\$126,530
280	768	\$58,070	\$16,783	\$13,833	\$15,251	\$16,013	\$16,814	\$20,399	\$99,094
281	769	\$34,858	\$11,182	\$9,145	\$10,082	\$10,586	\$11,116	\$13,592	\$65,703
282	771	\$46,627	\$14,022	\$11,522	\$12,703	\$13,338	\$14,005	\$17,044	\$82,633
283	772	\$70,543	\$19,792	\$16,352	\$18,028	\$18,930	\$19,876	\$24,057	\$117,035
284	773	\$82,995	\$22,796	\$18,867	\$20,801	\$21,841	\$22,933	\$27,709	\$134,949
285	774	\$67,959	\$19,169	\$15,830	\$17,453	\$18,326	\$19,242	\$23,299	\$113,319
286	776	\$48,469	\$14,466	\$11,894	\$13,113	\$13,769	\$14,457	\$17,584	\$85,283

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
287	777	\$56,699	\$16,452	\$13,556	\$14,946	\$15,693	\$16,477	\$19,997	\$97,121
288	778	\$75,431	\$20,971	\$17,340	\$19,117	\$20,073	\$21,076	\$25,491	\$124,067
289	801	\$41,216	\$12,716	\$10,429	\$11,498	\$12,073	\$12,676	\$15,457	\$74,849
290	802	\$46,181	\$13,914	\$11,432	\$12,603	\$13,234	\$13,895	\$16,913	\$81,991
291	803	\$44,759	\$13,571	\$11,144	\$12,287	\$12,901	\$13,546	\$16,496	\$79,945
292	804	\$13,846	\$6,113	\$4,901	\$5,403	\$5,673	\$5,957	\$7,430	\$35,476
293	805	\$61,362	\$17,577	\$14,498	\$15,984	\$16,783	\$17,622	\$21,365	\$103,829
294	806	\$48,592	\$14,496	\$11,919	\$13,140	\$13,797	\$14,487	\$17,620	\$85,459
295	807	\$50,862	\$15,044	\$12,377	\$13,646	\$14,328	\$15,045	\$18,286	\$88,725
296	808	\$67,281	\$19,005	\$15,694	\$17,302	\$18,167	\$19,076	\$23,101	\$112,344
297	809	\$51,087	\$15,098	\$12,423	\$13,696	\$14,381	\$15,100	\$18,352	\$89,048
298	811	\$42,025	\$12,912	\$10,592	\$11,678	\$12,262	\$12,875	\$15,694	\$76,013
299	812	\$24,922	\$8,785	\$7,138	\$7,870	\$8,263	\$8,676	\$10,678	\$51,410
300	813	\$106,487	\$28,464	\$23,612	\$26,033	\$27,334	\$28,701	\$34,598	\$168,742
301	814	\$58,334	\$16,846	\$13,886	\$15,310	\$16,075	\$16,879	\$20,477	\$99,473
302	815	\$46,026	\$13,877	\$11,400	\$12,569	\$13,197	\$13,857	\$16,867	\$81,768
303	816	\$98,491	\$26,535	\$21,997	\$24,252	\$25,464	\$26,738	\$32,253	\$157,240
304	817	\$67,839	\$19,139	\$15,806	\$17,426	\$18,297	\$19,212	\$23,264	\$113,146
305	818	\$93,671	\$25,372	\$21,024	\$23,179	\$24,338	\$25,554	\$30,840	\$150,306
306	819	\$51,958	\$15,308	\$12,599	\$13,890	\$14,585	\$15,314	\$18,607	\$90,302
307	821	\$60,279	\$17,316	\$14,279	\$15,743	\$16,530	\$17,356	\$21,047	\$102,271
308	822	\$41,077	\$12,683	\$10,401	\$11,467	\$12,040	\$12,642	\$15,416	\$74,650
309	823	\$48,717	\$14,526	\$11,944	\$13,168	\$13,827	\$14,518	\$17,656	\$85,639
310	824	\$86,548	\$23,653	\$19,585	\$21,592	\$22,672	\$23,806	\$28,751	\$140,059
311	826	\$53,447	\$15,667	\$12,899	\$14,222	\$14,933	\$15,679	\$19,044	\$92,444
312	827	\$54,609	\$15,948	\$13,134	\$14,480	\$15,204	\$15,964	\$19,384	\$94,114
313	828	\$42,840	\$13,108	\$10,757	\$11,859	\$12,452	\$13,075	\$15,933	\$77,185
314	829	\$38,906	\$12,159	\$9,962	\$10,984	\$11,533	\$12,109	\$14,779	\$71,526
315	831	\$64,248	\$18,273	\$15,081	\$16,627	\$17,458	\$18,331	\$22,211	\$107,981
316	832	\$139,699	\$36,477	\$30,320	\$33,428	\$35,099	\$36,854	\$44,338	\$216,517
317	833	\$8,552	\$4,835	\$3,831	\$4,224	\$4,435	\$4,657	\$5,878	\$27,861
318	834	\$67,224	\$18,991	\$15,682	\$17,289	\$18,154	\$19,062	\$23,084	\$112,262
319	836	\$56,252	\$16,344	\$13,466	\$14,846	\$15,588	\$16,368	\$19,866	\$96,479
320	837	\$104,459	\$27,975	\$23,203	\$25,581	\$26,860	\$28,203	\$34,004	\$165,825
321	838	\$102,596	\$27,525	\$22,826	\$25,166	\$26,424	\$27,745	\$33,457	\$163,144
322	839	\$62,320	\$17,808	\$14,691	\$16,197	\$17,007	\$17,858	\$21,646	\$105,207
323	841	\$43,856	\$13,353	\$10,962	\$12,086	\$12,690	\$13,325	\$16,231	\$78,647
324	842	\$90,982	\$24,723	\$20,480	\$22,580	\$23,709	\$24,894	\$30,051	\$146,438
325	843	\$56,039	\$16,293	\$13,423	\$14,799	\$15,539	\$16,315	\$19,804	\$96,172
326	844	\$56,039	\$16,293	\$13,423	\$14,799	\$15,539	\$16,315	\$19,804	\$96,172
327	846	\$40,722	\$12,597	\$10,329	\$11,388	\$11,957	\$12,555	\$15,312	\$74,139

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>							
<u>No.</u>	<u>Tract</u>	<u>Normalized Acquisition Cost</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
328	847	\$68,774	\$19,365	\$15,995	\$17,634	\$18,516	\$19,442	\$23,538	\$114,491
329	848	\$93,824	\$25,409	\$21,055	\$23,213	\$24,373	\$25,592	\$30,885	\$150,526
330	849	\$57,158	\$16,563	\$13,649	\$15,048	\$15,800	\$16,590	\$20,132	\$97,782
331	851	\$59,031	\$17,015	\$14,027	\$15,465	\$16,238	\$17,050	\$20,681	\$100,476
332	852	\$49,782	\$14,783	\$12,159	\$13,405	\$14,076	\$14,779	\$17,969	\$87,172
333	853	\$75,571	\$21,005	\$17,368	\$19,148	\$20,105	\$21,111	\$25,532	\$124,269
334	854	\$44,158	\$13,426	\$11,023	\$12,153	\$12,761	\$13,399	\$16,319	\$79,081
335	856	\$59,243	\$17,066	\$14,070	\$15,512	\$16,288	\$17,102	\$20,743	\$100,781
336	857	\$128,888	\$33,869	\$28,137	\$31,021	\$32,572	\$34,200	\$41,168	\$200,966
337	858	\$70,515	\$19,785	\$16,347	\$18,022	\$18,923	\$19,869	\$24,049	\$116,996
338	859	\$66,627	\$18,847	\$15,561	\$17,156	\$18,014	\$18,915	\$22,909	\$111,402
339	861	\$34,327	\$11,054	\$9,038	\$9,964	\$10,462	\$10,985	\$13,437	\$64,940
340	862	\$46,912	\$14,091	\$11,579	\$12,766	\$13,405	\$14,075	\$17,127	\$83,043
341	863	\$53,995	\$15,799	\$13,010	\$14,343	\$15,061	\$15,814	\$19,204	\$93,231
342	864	\$76,457	\$21,219	\$17,547	\$19,345	\$20,313	\$21,328	\$25,792	\$125,543
343	866	\$41,784	\$12,853	\$10,544	\$11,624	\$12,206	\$12,816	\$15,623	\$75,667
344	867	\$33,557	\$10,868	\$8,882	\$9,792	\$10,282	\$10,796	\$13,211	\$63,831
345	868	\$62,839	\$17,933	\$14,796	\$16,313	\$17,129	\$17,985	\$21,798	\$105,955
346	869	\$33,720	\$10,908	\$8,915	\$9,829	\$10,320	\$10,836	\$13,258	\$64,066
347	870	\$36,862	\$11,666	\$9,549	\$10,528	\$11,055	\$11,607	\$14,180	\$68,586
348	871	\$40,986	\$12,661	\$10,382	\$11,447	\$12,019	\$12,620	\$15,389	\$74,518
349	872	\$72,800	\$20,337	\$16,808	\$18,531	\$19,458	\$20,430	\$24,719	\$120,283
350	873	\$71,538	\$20,032	\$16,553	\$18,250	\$19,162	\$20,121	\$24,349	\$118,467
351	874	\$57,806	\$16,719	\$13,780	\$15,192	\$15,952	\$16,749	\$20,322	\$98,714
352	876	\$36,815	\$11,654	\$9,540	\$10,518	\$11,044	\$11,596	\$14,166	\$68,518
353	877	\$32,338	\$10,574	\$8,636	\$9,521	\$9,997	\$10,497	\$12,853	\$62,079
354	878	\$34,375	\$11,066	\$9,047	\$9,974	\$10,473	\$10,997	\$13,450	\$65,008
355	879	\$35,855	\$11,423	\$9,346	\$10,304	\$10,819	\$11,360	\$13,885	\$67,137
356	880	\$31,684	\$10,416	\$8,504	\$9,375	\$9,844	\$10,336	\$12,661	\$61,137
357	881	\$55,742	\$16,221	\$13,363	\$14,733	\$15,469	\$16,243	\$19,717	\$95,745
358	882	\$69,625	\$19,571	\$16,167	\$17,824	\$18,715	\$19,651	\$23,788	\$115,716
359	883	\$60,991	\$17,487	\$14,423	\$15,901	\$16,696	\$17,531	\$21,256	\$103,295
360	884	\$28,831	\$9,728	\$7,928	\$8,740	\$9,177	\$9,636	\$11,825	\$57,034
361	886	\$33,040	\$10,744	\$8,778	\$9,677	\$10,161	\$10,669	\$13,059	\$63,088
362	887	\$42,840	\$13,108	\$10,757	\$11,859	\$12,452	\$13,075	\$15,933	\$77,185
363	888	\$65,530	\$18,583	\$15,340	\$16,912	\$17,758	\$18,646	\$22,587	\$109,825
364	889	\$15,312	\$6,466	\$5,197	\$5,729	\$6,016	\$6,317	\$7,860	\$37,585
365	891	\$316,302	\$79,086	\$65,990	\$72,754	\$76,392	\$80,211	\$96,129	\$470,562
366	892	\$63,364	\$18,060	\$14,902	\$16,430	\$17,251	\$18,114	\$21,952	\$106,709
367	901	\$189,717	\$48,545	\$40,423	\$44,566	\$46,794	\$49,134	\$59,007	\$288,469
368	902	\$10,462	\$5,296	\$4,217	\$4,650	\$4,882	\$5,126	\$6,438	\$30,610

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
369	904	\$43,443	\$13,254	\$10,879	\$11,994	\$12,593	\$13,223	\$16,110	\$78,052
370	906	\$11,272	\$5,492	\$4,381	\$4,830	\$5,071	\$5,325	\$6,675	\$31,774
371	907	\$26,318	\$9,122	\$7,420	\$8,180	\$8,589	\$9,019	\$11,088	\$53,418
372	908	\$62,481	\$17,847	\$14,724	\$16,233	\$17,045	\$17,897	\$21,693	\$105,439
373	909	\$58,295	\$16,837	\$13,878	\$15,301	\$16,066	\$16,869	\$20,465	\$99,417
374	911	\$87,825	\$23,962	\$19,843	\$21,877	\$22,971	\$24,119	\$29,125	\$141,897
375	912	\$13,543	\$6,040	\$4,840	\$5,336	\$5,602	\$5,882	\$7,341	\$35,041
376	913	\$86,678	\$23,685	\$19,611	\$21,621	\$22,703	\$23,838	\$28,789	\$140,247
377	914	\$12,412	\$5,767	\$4,611	\$5,084	\$5,338	\$5,605	\$7,010	\$33,414
378	916	\$57,981	\$16,761	\$13,815	\$15,231	\$15,993	\$16,792	\$20,373	\$98,965
379	917	\$47,220	\$14,165	\$11,642	\$12,835	\$13,477	\$14,150	\$17,217	\$83,486
380	919	\$79,596	\$21,976	\$18,181	\$20,044	\$21,047	\$22,099	\$26,712	\$130,059
381	922	\$377,477	\$93,845	\$78,346	\$86,376	\$90,695	\$95,230	\$114,069	\$558,563
382	923	\$67,622	\$19,087	\$15,762	\$17,378	\$18,247	\$19,159	\$23,201	\$112,834
383	924	\$64,521	\$18,339	\$15,136	\$16,687	\$17,522	\$18,398	\$22,291	\$108,373
384	925	\$1,669,943	\$405,676	\$339,395	\$374,183	\$392,892	\$412,537	\$493,101	\$2,417,784
385	926	\$42,677	\$13,069	\$10,724	\$11,823	\$12,414	\$13,035	\$15,885	\$76,951
386	927	\$39,810	\$12,377	\$10,145	\$11,185	\$11,744	\$12,331	\$15,044	\$72,827
387	928	\$70,505	\$19,783	\$16,345	\$18,020	\$18,921	\$19,867	\$24,046	\$116,982
388	929	\$39,950	\$12,411	\$10,173	\$11,216	\$11,777	\$12,366	\$15,086	\$73,028
389	931	\$46,386	\$13,964	\$11,473	\$12,649	\$13,282	\$13,946	\$16,973	\$82,286
390	932	\$74,074	\$20,644	\$17,065	\$18,815	\$19,755	\$20,743	\$25,093	\$122,115
391	933	\$115,269	\$30,583	\$25,386	\$27,988	\$29,387	\$30,857	\$37,174	\$181,374
392	934	\$48,425	\$14,456	\$11,885	\$13,103	\$13,758	\$14,446	\$17,571	\$85,220
393	936	\$71,034	\$19,911	\$16,452	\$18,138	\$19,045	\$19,997	\$24,201	\$117,743
394	937	\$39,079	\$12,201	\$9,997	\$11,022	\$11,573	\$12,152	\$14,830	\$71,775
395	939	\$61,158	\$17,528	\$14,457	\$15,939	\$16,736	\$17,572	\$21,305	\$103,536
396	941	\$60,914	\$17,469	\$14,407	\$15,884	\$16,678	\$17,512	\$21,233	\$103,185
397	942	\$87,437	\$23,868	\$19,765	\$21,790	\$22,880	\$24,024	\$29,012	\$141,339
398	943	\$34,000	\$10,975	\$8,971	\$9,891	\$10,386	\$10,905	\$13,341	\$64,469
399	944	\$107,302	\$28,661	\$23,777	\$26,214	\$27,525	\$28,901	\$34,837	\$169,914
400	946	\$59,212	\$17,058	\$14,064	\$15,505	\$16,280	\$17,094	\$20,734	\$100,736
401	947	\$35,640	\$11,371	\$9,303	\$10,256	\$10,769	\$11,308	\$13,822	\$66,828
402	948	\$39,973	\$12,416	\$10,178	\$11,221	\$11,782	\$12,371	\$15,092	\$73,061
403	949	\$49,828	\$14,794	\$12,168	\$13,416	\$14,086	\$14,791	\$17,982	\$87,237
404	952	\$65,400	\$18,551	\$15,314	\$16,883	\$17,727	\$18,614	\$22,549	\$109,638
405	953	\$84,623	\$23,189	\$19,196	\$21,164	\$22,222	\$23,333	\$28,186	\$137,290
406	954	\$72,269	\$20,208	\$16,701	\$18,413	\$19,333	\$20,300	\$24,563	\$119,519
407	956	\$40,722	\$12,597	\$10,329	\$11,388	\$11,957	\$12,555	\$15,312	\$74,139
408	957	\$33,018	\$10,738	\$8,773	\$9,672	\$10,156	\$10,664	\$13,052	\$63,056
409	958	\$26,802	\$9,239	\$7,518	\$8,288	\$8,703	\$9,138	\$11,230	\$54,114

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						<u>Total Losses Avoided</u>
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
410	959	\$45,257	\$13,691	\$11,245	\$12,398	\$13,018	\$13,669	\$16,642	\$80,662
411	961	\$256,381	\$64,629	\$53,887	\$59,411	\$62,381	\$65,501	\$78,557	\$384,366
412	962	\$47,541	\$14,242	\$11,706	\$12,906	\$13,552	\$14,229	\$17,312	\$83,947
413	963	\$51,030	\$15,084	\$12,411	\$13,683	\$14,367	\$15,086	\$18,335	\$88,966
414	964	\$56,283	\$16,352	\$13,472	\$14,853	\$15,596	\$16,375	\$19,875	\$96,523
415	966	\$58,233	\$16,822	\$13,866	\$15,287	\$16,052	\$16,854	\$20,447	\$99,328
416	967	\$11,739	\$5,605	\$4,475	\$4,934	\$5,181	\$5,440	\$6,812	\$32,447
417	968	\$29,320	\$9,846	\$8,026	\$8,849	\$9,291	\$9,756	\$11,968	\$57,737
418	969	\$11,440	\$5,532	\$4,415	\$4,867	\$5,111	\$5,366	\$6,724	\$32,016
419	971	\$11,277	\$5,493	\$4,382	\$4,831	\$5,073	\$5,326	\$6,677	\$31,781
420	972	\$182,814	\$46,879	\$39,029	\$43,029	\$45,180	\$47,439	\$56,982	\$278,539
421	973	\$53,817	\$15,757	\$12,974	\$14,304	\$15,019	\$15,770	\$19,152	\$92,976
422	974	\$50,352	\$14,921	\$12,274	\$13,532	\$14,209	\$14,919	\$18,136	\$87,992
423	976	\$54,894	\$16,016	\$13,192	\$14,544	\$15,271	\$16,034	\$19,468	\$94,525
424	977	\$65,309	\$18,529	\$15,295	\$16,863	\$17,706	\$18,591	\$22,522	\$109,507
425	978	\$68,259	\$19,241	\$15,891	\$17,520	\$18,396	\$19,316	\$23,387	\$113,750
426	979	\$69,985	\$19,657	\$16,240	\$17,904	\$18,799	\$19,739	\$23,894	\$116,234
427	981	\$40,069	\$12,440	\$10,197	\$11,242	\$11,805	\$12,395	\$15,120	\$73,199
428	1101	\$71,590	\$20,045	\$16,564	\$18,262	\$19,175	\$20,133	\$24,364	\$118,542
429	1102	\$73,468	\$20,498	\$16,943	\$18,680	\$19,614	\$20,594	\$24,915	\$121,244
430	1103	\$90,037	\$24,495	\$20,290	\$22,369	\$23,488	\$24,662	\$29,774	\$145,079
431	1106	\$83,929	\$23,022	\$19,056	\$21,009	\$22,060	\$23,163	\$27,983	\$136,292
432	1107	\$132,266	\$34,684	\$28,819	\$31,773	\$33,362	\$35,030	\$42,158	\$205,825
433	1108	\$100,014	\$26,902	\$22,305	\$24,591	\$25,821	\$27,112	\$32,700	\$159,430
434	1109	\$106,693	\$28,514	\$23,654	\$26,078	\$27,382	\$28,751	\$34,659	\$169,038
435	1111	\$101,009	\$27,143	\$22,506	\$24,813	\$26,053	\$27,356	\$32,992	\$160,862
436	1112	\$71,311	\$19,977	\$16,507	\$18,200	\$19,109	\$20,065	\$24,283	\$118,141
437	1113	\$89,988	\$24,483	\$20,280	\$22,358	\$23,476	\$24,650	\$29,760	\$145,008
438	1114	\$108,647	\$28,985	\$24,049	\$26,513	\$27,839	\$29,231	\$35,232	\$171,849
439	1116	\$46,586	\$14,012	\$11,514	\$12,694	\$13,328	\$13,995	\$17,032	\$82,574
440	1201	\$102,686	\$27,547	\$22,844	\$25,186	\$26,445	\$27,767	\$33,483	\$163,273
441	1202	\$146,601	\$38,142	\$31,714	\$34,965	\$36,713	\$38,549	\$46,362	\$226,445
442	1203	\$120,538	\$31,854	\$26,450	\$29,161	\$30,619	\$32,150	\$38,719	\$188,955
443	1204	\$98,604	\$26,562	\$22,020	\$24,277	\$25,491	\$26,765	\$32,286	\$157,401
444	1206	\$102,161	\$27,420	\$22,738	\$25,069	\$26,323	\$27,639	\$33,330	\$162,519
445	1207	\$98,156	\$26,454	\$21,929	\$24,177	\$25,386	\$26,655	\$32,155	\$156,757
446	1208	\$53,462	\$15,671	\$12,902	\$14,225	\$14,936	\$15,683	\$19,048	\$92,465
447	1209	\$81,202	\$22,364	\$18,505	\$20,402	\$21,422	\$22,493	\$27,183	\$132,369
448	1211	\$100,091	\$26,921	\$22,320	\$24,608	\$25,838	\$27,130	\$32,722	\$159,541
449	1212	\$79,845	\$22,036	\$18,231	\$20,100	\$21,105	\$22,160	\$26,785	\$130,417
450	1213	\$82,178	\$22,599	\$18,702	\$20,619	\$21,650	\$22,733	\$27,469	\$133,773

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	
		<u>518 ft</u>	<u>520 ft</u>	<u>519 ft</u>	<u>519.6 ft</u>	<u>519.5 ft</u>	<u>519 ft</u>	<u>520 ft</u>	
		<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>							
<u>No.</u>	<u>Tract</u>	<u>Normalized Acquisition Cost</u>	<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
451	1214	\$89,832	\$24,446	\$20,248	\$22,324	\$23,440	\$24,612	\$29,714	\$144,783
452	1216	\$72,160	\$20,182	\$16,679	\$18,388	\$19,308	\$20,273	\$24,531	\$119,362
453	1217	\$93,702	\$25,380	\$21,030	\$23,185	\$24,345	\$25,562	\$30,849	\$150,351
454	1218	\$121,353	\$32,051	\$26,615	\$29,343	\$30,810	\$32,350	\$38,958	\$190,126
455	1219	\$75,255	\$20,929	\$17,304	\$19,078	\$20,032	\$21,033	\$25,439	\$123,814
456	1221	\$91,459	\$24,838	\$20,577	\$22,686	\$23,820	\$25,011	\$30,191	\$147,124
457	1222	\$100,083	\$26,919	\$22,319	\$24,606	\$25,837	\$27,128	\$32,720	\$159,529
458	1223	\$111,921	\$29,775	\$24,710	\$27,243	\$28,605	\$30,035	\$36,192	\$176,559
459	1224	\$100,268	\$26,964	\$22,356	\$24,648	\$25,880	\$27,174	\$32,775	\$159,796
460	1226	\$89,182	\$24,289	\$20,117	\$22,179	\$23,288	\$24,452	\$29,523	\$143,848
461	1227	\$73,105	\$20,410	\$16,870	\$18,599	\$19,529	\$20,505	\$24,809	\$120,721
462	1228	\$69,008	\$19,422	\$16,042	\$17,687	\$18,571	\$19,499	\$23,607	\$114,828
463	1229	\$104,764	\$28,048	\$23,264	\$25,649	\$26,931	\$28,278	\$34,093	\$166,263
464	1231	\$99,973	\$26,893	\$22,297	\$24,582	\$25,811	\$27,102	\$32,688	\$159,372
465	1232	\$70,254	\$19,722	\$16,294	\$17,964	\$18,862	\$19,805	\$23,973	\$116,621
466	1233	\$69,920	\$19,642	\$16,227	\$17,890	\$18,784	\$19,723	\$23,875	\$116,140
467	1234	\$103,272	\$27,688	\$22,963	\$25,316	\$26,582	\$27,911	\$33,655	\$164,117
468	1236	\$102,979	\$27,618	\$22,904	\$25,251	\$26,514	\$27,839	\$33,569	\$163,695
469	1237	\$113,249	\$30,096	\$24,978	\$27,538	\$28,915	\$30,361	\$36,581	\$178,469
470	1301	\$90,348	\$24,570	\$20,353	\$22,439	\$23,561	\$24,739	\$29,865	\$145,526
471	1302	\$98,937	\$26,643	\$22,087	\$24,351	\$25,569	\$26,847	\$32,384	\$157,882
472	1303	\$102,477	\$27,497	\$22,802	\$25,139	\$26,396	\$27,716	\$33,422	\$162,973
473	1304	\$82,942	\$22,783	\$18,857	\$20,789	\$21,829	\$22,920	\$27,693	\$134,872
474	1306	\$112,068	\$29,811	\$24,739	\$27,275	\$28,639	\$30,071	\$36,235	\$176,770
475	1307	\$62,367	\$17,819	\$14,701	\$16,208	\$17,018	\$17,869	\$21,660	\$105,275
476	1308	\$106,517	\$28,471	\$23,618	\$26,039	\$27,341	\$28,708	\$34,607	\$168,784
477	1309	\$63,608	\$18,119	\$14,952	\$16,484	\$17,308	\$18,174	\$22,024	\$107,060
478	1311	\$69,635	\$19,573	\$16,169	\$17,826	\$18,718	\$19,653	\$23,791	\$115,730
479	1312	\$80,793	\$22,265	\$18,423	\$20,311	\$21,326	\$22,393	\$27,063	\$131,781
480	1313	\$98,724	\$26,591	\$22,044	\$24,304	\$25,519	\$26,795	\$32,322	\$157,575
481	1314	\$98,388	\$26,510	\$21,976	\$24,229	\$25,440	\$26,713	\$32,223	\$157,092
482	1316	\$90,689	\$24,652	\$20,421	\$22,514	\$23,640	\$24,822	\$29,965	\$146,016
483	1317	\$106,855	\$28,553	\$23,687	\$26,114	\$27,420	\$28,791	\$34,706	\$169,272
484	1318	\$85,517	\$23,405	\$19,377	\$21,363	\$22,431	\$23,552	\$28,449	\$138,576
485	1319	\$53,754	\$15,741	\$12,961	\$14,290	\$15,004	\$15,754	\$19,134	\$92,884
486	1321	\$87,195	\$23,809	\$19,716	\$21,736	\$22,823	\$23,964	\$28,941	\$140,990
487	1322	\$99,762	\$26,841	\$22,254	\$24,535	\$25,762	\$27,050	\$32,626	\$159,067
488	1323	\$115,041	\$30,528	\$25,340	\$27,937	\$29,334	\$30,801	\$37,107	\$181,046
489	1324	\$132,266	\$34,684	\$28,819	\$31,773	\$33,362	\$35,030	\$42,158	\$205,825
490	1326	\$80,583	\$22,214	\$18,380	\$20,264	\$21,277	\$22,341	\$27,002	\$131,479
491	1327	\$100,397	\$26,995	\$22,382	\$24,676	\$25,910	\$27,206	\$32,812	\$159,981

Normalized to Year 2000 Discount rate: 5%		<u>FFE</u>	Mar-00	Jun-99	Jan-98	Jan-97	Mar-96	Jan-96	
		518 ft	520 ft	519 ft	519.6 ft	519.5 ft	519 ft	520 ft	
		<u>Normalized Acquisition Cost</u>	<u>Normalized Losses Avoided Estimates for Six Flood Events in Birmingham</u>						
<u>No.</u>	<u>Tract</u>		<u>Mar-00</u>	<u>Jun-99</u>	<u>Jan-98</u>	<u>Jan-97</u>	<u>Mar-96</u>	<u>Jan-96</u>	<u>Total Losses Avoided</u>
492	1328	\$101,558	\$27,275	\$22,617	\$24,935	\$26,182	\$27,491	\$33,153	\$161,652
493	1329	\$90,599	\$24,631	\$20,403	\$22,495	\$23,619	\$24,800	\$29,939	\$145,887
494	1331	\$102,475	\$27,496	\$22,802	\$25,139	\$26,396	\$27,716	\$33,422	\$162,971
495	1332	\$73,789	\$20,575	\$17,008	\$18,751	\$19,689	\$20,673	\$25,009	\$121,705
496	1333	\$71,631	\$20,054	\$16,572	\$18,271	\$19,184	\$20,143	\$24,376	\$118,601
497	1334	\$98,503	\$26,538	\$21,999	\$24,254	\$25,467	\$26,741	\$32,257	\$157,256
498	1336	\$99,780	\$26,846	\$22,257	\$24,539	\$25,766	\$27,054	\$32,631	\$159,093
499	1337	\$83,684	\$22,963	\$19,007	\$20,955	\$22,002	\$23,103	\$27,911	\$135,940
500	1338	\$87,512	\$23,886	\$19,780	\$21,807	\$22,898	\$24,042	\$29,034	\$141,447
501	1339	\$112,557	\$29,929	\$24,838	\$27,384	\$28,753	\$30,191	\$36,378	\$177,473
502	1341	\$93,663	\$25,370	\$21,022	\$23,177	\$24,336	\$25,552	\$30,838	\$150,294
503	1342	\$101,480	\$27,256	\$22,601	\$24,917	\$26,163	\$27,472	\$33,130	\$161,539
504	1343	\$104,412	\$27,964	\$23,193	\$25,570	\$26,849	\$28,191	\$33,990	\$165,757
505	1344	\$60,269	\$17,313	\$14,277	\$15,741	\$16,528	\$17,354	\$21,044	\$102,257
506	1346	\$145,297	\$37,828	\$31,451	\$34,675	\$36,408	\$38,229	\$45,980	\$224,571
507	1348	\$90,762	\$24,670	\$20,436	\$22,531	\$23,657	\$24,840	\$29,987	\$146,121
508	1349	\$126,687	\$33,338	\$27,692	\$30,531	\$32,057	\$33,660	\$40,522	\$197,800
509	1351	\$64,455	\$18,323	\$15,123	\$16,673	\$17,506	\$18,382	\$22,272	\$108,279
510	1352	\$129,228	\$33,951	\$28,205	\$31,096	\$32,651	\$34,284	\$41,267	\$201,455
511	1353	\$83,978	\$23,033	\$19,066	\$21,020	\$22,071	\$23,175	\$27,997	\$136,362
512	1354	\$106,228	\$28,402	\$23,560	\$25,975	\$27,274	\$28,637	\$34,522	\$168,370
513	1356	\$78,472	\$21,705	\$17,954	\$19,794	\$20,784	\$21,823	\$26,383	\$128,442
514	1357	\$144,972	\$37,749	\$31,385	\$34,602	\$36,332	\$38,149	\$45,884	\$224,102
515	1358	\$106,693	\$28,514	\$23,654	\$26,078	\$27,382	\$28,751	\$34,659	\$169,038
516	1359	\$117,280	\$31,068	\$25,792	\$28,436	\$29,858	\$31,351	\$37,764	\$184,268
517	NA	\$54,853	\$16,006	\$13,183	\$14,535	\$15,261	\$16,024	\$19,456	\$94,466
518	NA	\$91,707	\$24,898	\$20,627	\$22,741	\$23,878	\$25,072	\$30,264	\$147,480
<u>Total</u>		<u>\$36,322,343</u>	<u>\$10,199,415</u>	<u>\$8,426,270</u>	<u>\$9,289,963</u>	<u>\$9,754,461</u>	<u>\$10,242,184</u>	<u>\$12,397,453</u>	<u>\$60,309,747</u>
<u>Percentage of Losses Avoided To Acquisition Costs</u>			28%	23%	26%	27%	28%	34%	166%

Appendix D

Summary of Sample Benefit to Cost Analysis